ACCESSION NR: AP4012966

$$\varphi(\vartheta) = \varphi(-\vartheta), \tag{4}$$

$$\omega(\vartheta) = -\omega(-\vartheta). \tag{5}$$

From here:

$$\varphi(r, \vartheta, z) = \sum_{n=1}^{\infty} \sum_{\nu=0}^{\infty} (-1)^{\nu} \frac{[N(2n-1)]!}{4^{\nu}\nu![N(2n-1)+\nu]!} \Phi_{N(2n-1)}^{(2\nu)} r^{N(2n-1)+2\nu} \cos N(2n-1)\vartheta, \tag{6}$$

$$\omega(r, \vartheta, z) = \sum_{n=1}^{\infty} \sum_{\nu=0}^{\infty} (-1)^{\nu} \frac{[N(2n-1)]!}{4^{\nu}\nu![N(2n-1)+\nu]!} \Omega_{N(2n-1)}^{(2\nu)} r^{N(2n-1)+2\nu} \sin N(2n-1)\vartheta \tag{7}$$

The lens field near the axis was examined. Authors assumed that binomial coefficients are connected by the equality

$$C_N^l = \frac{N-l+1}{l} C_N^{l-1}, \tag{8}$$

Card 3/5

Then

$$x'' = -\frac{e}{m_0 v^2}\sqrt{1-\frac{v^2}{c^2}}\left[\Phi_N - \frac{v}{c}\Omega_N\right]\times$$
$$\times\left[C_N x^{N-1} - 3C_N^3 x^{N-3}y^2 + 5C_N^5 x^{N-5}y^4 - \ldots\right],$$
$$y'' = +\frac{e}{m_0 v^2}\sqrt{1-\frac{v^2}{c^2}}\left[\Phi_N - \frac{v}{c}\Omega_N\right]\times \qquad (9)$$
$$\times\left[2C_N^2 x^{N-2}y - 4C_N^4 x^{N-4}y^3 + 6C_N^6 x^{N-6}y^5 - \ldots\right].$$

The condition for achromaticity will be the equality to zero of the first derivative with respect to velocity, of the right sides of (9). The connection between the electrostatic and magnetic fields for a given velocity v_0 can then be found by

$$\Phi_N(z) = \frac{v_0 c}{2c^2 - v_0^2}\Omega_N(z) \qquad (10)$$

or, in a non-relativistic approximation

$$\Phi_N(z) = \frac{v_0}{2c}\Omega_N(z). \qquad (11)$$

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ACCESSION NR: AP4012966

The ratio between the coefficients Φ_N and Λ_N is identical for all lens, independent of the number of poles contained in them. Orig. art. has: 1 figure and 15 equations.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A.F. Ioffe Akademii nauk SSSR (Physics-engineering institute Academy of Sciences SSSR)

SUBMITTED: 10Sep63 DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: PH NO REF SOV: 002 OTHER: 000

Card 5/5

ACCESSION NR: AP4019973 S/0020/64/154/006/1321/1324

AUTHOR: Dy*mnikov, A. D.; Fishkova, T. Ya.; Yavor, S. Ya.

TITLE: Spherical aberration of a two-dimensional electrostatic quadrupole lens without antisymmetric planes

SOURCE: AN SSSR. Doklady*, v. 154, no. 6, 1964, 1321-1324

TOPIC TAGS: spherical aberration of electrostatic lens, quadrupole electrostatic lens, electron microscope lens, spherical aberration correction, electron microscope, spherical aberration

ABSTRACT: In the present paper, a method has been developed for the correction of spherical aberration which is based on the maintaining of symmetry planes of the field in the absence of antisymmetry planes. An example of such asymmetry is presented by an electrostatic lens which has different distances between electrodes of the same sign. The possibility of such a correction is shown on a two-dimensional electrostatic quadrupole lens. In the equations for trajectories of

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ACCESSION NR: AP4019973

charged particles, terms are considered which are necessary for the computation of aberrations of the third order. The computation shows that spherical aberration cannot be compensated along the whole image. The length of the linear image is not greatly affected by spherical aberration. The suggested method of correction permits one either to reduce the spherical aberration along the whole length of the image, or to completely compensate it in the center. Orig. art. has: 3 figures and 24 equations.

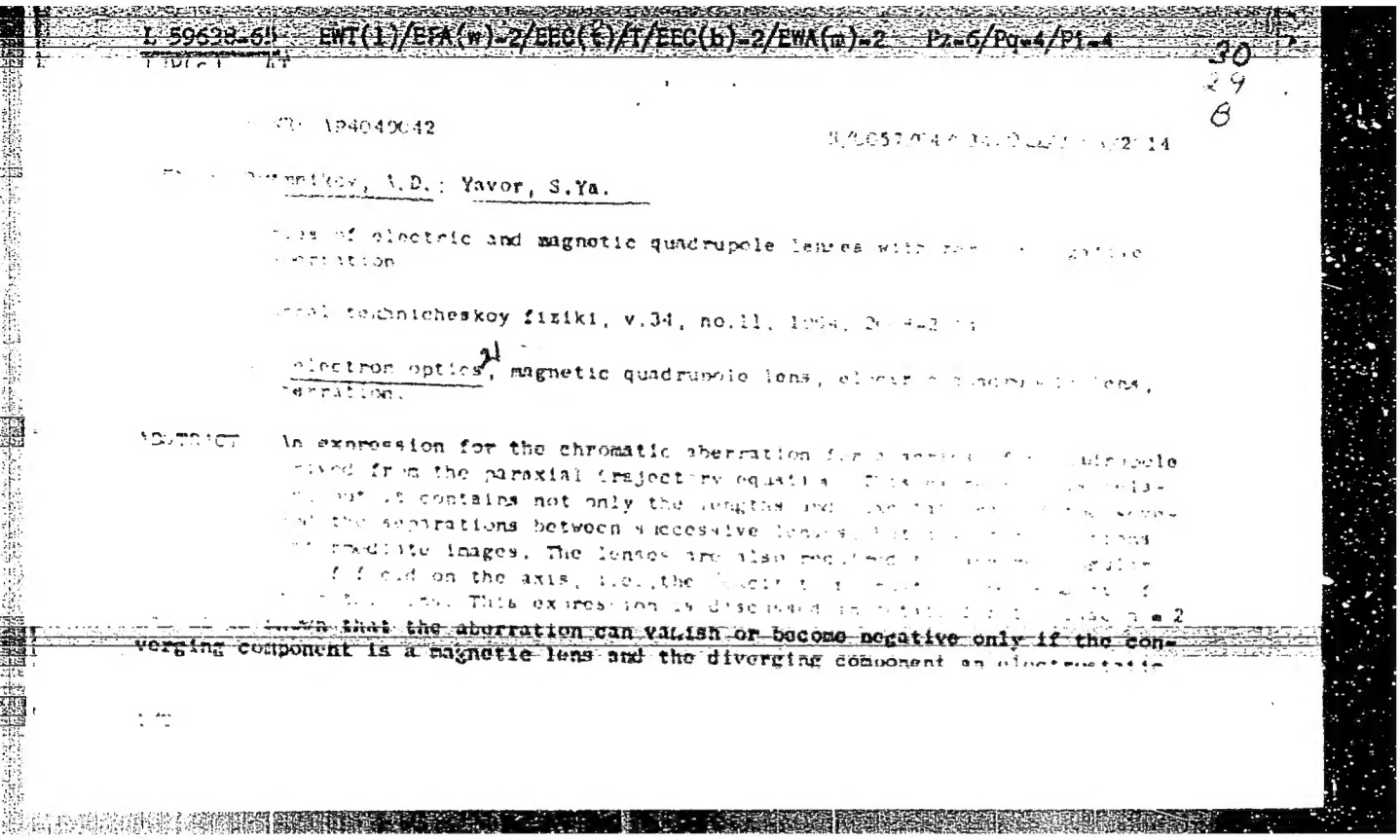
ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii Nauk SSSR (Physics-Engineering Institute, Academy of Sciences, SSSR)

SUBMITTED: 24Sep63 DATE ACQ: 23Mar64 ENCL: 00

SUB CODE: PH NO REF SOV: 004 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000411810005-1"



L 59638-65 EWT(1)/EPA(w)-2/EEC(t)/T/EEC(b)-2/EWA(m)-2 Pz-6/Pq-4/Pt-4

ACCESSION NR: AP5004042

Ivanitskiy, I.D.; Yavor, S.Ya.

Theory of electric and magnetic quadrupole lenses with [illegible] correction

Zhurnal tekhnicheskoy fiziki, v.34, no.11, 1964, [illegible]

TOPIC TAGS: electron optics, magnetic quadrupole lens, [illegible] lens, aberration.

ABSTRACT: An expression for the chromatic aberration [illegible] quadrupole lens is derived from the paraxial trajectory equation. This expression contains not only the lengths and [illegible] of the separations between successive lenses, but also [illegible] of the conjugate images. The lenses are also supposed [illegible] on the axis, i.e., the [illegible]. This expression is discussed in detail for [illegible] = 2 and it is shown that the aberration can vanish or become negative only if the converging component is a magnetic lens and the diverging component an electrostatic

AP4049042

...pole doublet, therefore, cannot ... in both ... perpendicular planes containing the axis. ... equa- ... thin lens doublet is written, and it is shown that in this case the ... of the image position ... even in one plane. A symmetric ... described by the ... system can be made to produce a point image of a point source and to ... achromatic in both planes either with ... magnetic, or vice versa. ... different. Orig. art. has: ...

... Elektrotekhnicheskiy institut ... Institute, AN SSSR

...Apr64

L 40239-65 EWT(1) Pq-4 IJP(c)

AP5007287 3/0057/65/035/003/0431/0440

[illegible], A.D.; Fishkova, T.Ya.; Yavor, S.Ya.

[illegible]ence of the geometric parameters on the optical [illegible] of a system [illegible]uple lenses, analogous to an axially symmetric [illegible]

[illegible] tekhnicheskoy fiziki, v.35, no.3, 1965 [illegible]

[illegible]ctron optics, magnetic quadrupole lens, axial [illegible]

[illegible]uthors have previously described and [illegible] type of quadrupole quadruplet consisting of two identical quadrupole doublets and having [illegible] analogous to those of an axially symmetric lens (ZhTF 33,851,1963; Izv. [illegible],1131,1963; Radiotekhnika i elektronika [illegible] Euro[illegible]nference on Electron Microscopy, Prague,1964). [illegible] quadrupole [illegible] capable of forming a true image and [illegible] magnification. [illegible] some advantages over axially symmetric lenses, including possibility [illegible]nsation of spherical and chromatic aberrations. [illegible] numerical computations of the first order properties of [illegible]lets as functions of the system parameters, are [illegible] the re-

L 40939-65

ACCESSION NR: AP5007287

sults of these calculations in graphical form suitable for preliminary design pur-
[illegible] them at some length. The system parameters [illegible] of
[illegible] poles of the doublet, the separation between them, the [illegible] be-
[illegible] doublets, and the excitation of one quadrupole [illegible] of
[illegible] poles are then determined by the condition for [illegible] symmetry.
[illegible] particular attention is given to conditions for [illegible] final
[illegible] magnification. "In conclusion, the authors express [illegible] p
[illegible] Novikova for performing the laborious computat[illegible] on the BESM-2
computer. Orig.art.has: 2 formulas and 12 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im.A.F.Ioffe AN SSSR Leningrad
[illegible]ical Institute, AN SSSR)

[illegible]64v64 ENCL: 00 SUB [illegible]DE,GP,EM

[illegible] 008 OTHER: 003

DYMNIKOV, A.D.; FISHKOVA, T.Ya.; YAVOR, S.Ya.

Spherical aberration of the width of a linear image in a composite quadrupole lens. Zhur. tekh. fiz. 35 no.4:759-761 Ap '65. (MIRA 18:5)

1. Fiziko-tekhnicheskiy institut imeni Ioffe AN SSSR, Leningrad.

L 54759-65 EWT(1) Pq-4 IJP(c)

ACCESSION NR: AP5015631 UR/0057/65/035/006/1068/1076

Dymnikov, A.D.; Fishkova, T.Ya.; Yavor, S.Ya.

Spherical aberration of a combined quadrupole lens with a shaped field distribution

Zhurnal tekhnicheskoy fiziki, v.35, no.6, 1965, 1068-1076

TAGS: electron optics, magnetic quadrupole lens, electrostatic quadrupole lens, spherical aberration

ABSTRACT: The authors calculate the spherical aberration of a combined electrostatic and magnetic quadrupole lens similar to those for which they have previously discussed chromatic aberration (ZhTF 34, 1964; 35, No.4,1965). The calculations are based on formulas published in the earlier papers. Formulas for the spherical aberration are first derived for an arbitrary distribution of field strength on the axis and these are then specialized to the case in which the electric and magnetic fields are both proportional to

1/2

ACCESSION NR: AP5015631

$1/(1 + (z/d)^2)^2$, where z is the axial coordinate and d is a constant. Curves are given showing the spherical aberration coefficients as functions of the total excitation and of the ratio of the electric to magnetic field strength. The spherical aberration of a doublet consisting of two combined electrostatic and magnetic quadrupole lenses is discussed briefly and it is shown that the spherical aberration can be compensated over the entire length of the linear image. Numerical calculations concerning doublets are in progress. Orig.art. has: 38 formulas and 5 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im.A.F.Ioffe AN SSSR, Leningrad (Physico-technical Institute, AN SSSR)

SUBMITTED: 16Dec64 ENCL: 00 SUB CODE: OP,EM

NO REF SOV: 002 OTHER: 001

Card 2/2

L 3455-66 EWT(1) IJP(c)
ACCESSION NR: AP5017204 UR/0020/65/162/006/1265/1268

AUTHORS: Dymnikov, A. D.; Fishkova, T. Ya.; Yavor, S. Ya.

TITLE: Spherical aberration of a combined quadrupole lens with rectangular field distribution

SOURCE: AN SSSR. Doklady, v. 162, no. 6, 1965, 1265-1268

TOPIC TAGS: electron optics, magnetic quadrupole lens

ABSTRACT: In order to get around the mathematical difficulties involved in using a rectangular model for the calculation of spherical aberrations, the authors have derived for the spherical aberration expressions which do not contain the derivatives of the fields in explicit form. These expressions were obtained by solving, by perturbation theory, trajectory equations given in an earlier paper (ZhTF v. 34, 1711, 1964), and by subsequently transforming the obtained formulas by integration by parts. The particular analysis pertains to a field which is bounded in the axial direction when a pointlike object lying on the axis, as well as its linear image, are both situated in

Card 1/2

L 3455-66

ACCESSION NR: AP5017204

3

a field-free space. Plots of the coefficients of spherical aberration, obtained on the basis of these calculations, are included. The results were compared with experimental data for a parallel beam and were found to be in good agreement. This report was presented by B. P. Konstantinov. Orig. art. has: 3 figures and 19 formulas

ASSOCIATION: Fiziko-tekhnicheskiy institut im A. F. Ioffe Akademi nauk SSSR (Physicotechnical Institute, AN SSSR)

SUBMITTED: 31Dec64 ENCL: 00 SUB CODE: OP

NR REF SOV: 002 OTHER: 001

BVK

Card 2/2

L 36550-66 EWT(1)/T IJP(c)

ACC NR: AP6015754 (A,N) SOURCE CODE: UR/0048/66/030/005/0739/0741

AUTHOR: Dymnikov,A.D.; Fishkova,T.Ya.; Yavor,S.Ya. 42 B

ORG: none

TITLE: Dependence of the spherical aberration coefficients of a quadrupole lens on the object distance (rectangular model) /Report, Fifth All-Union Conference on Electron Microscopy held in Sumy 6-8 July 1965/ III

SOURCE: AN SSSR. Izvestiya, Seriya fizicheskaya, v. 30, no. 5, 1966, 739-741

TOPIC TAGS: electron optics, spherical aberration, magnetic quadrupole lens, electrostatic field

ABSTRACT: Equations given elsewhere by the present authors (Dokl. AN SSSR, 162, 1265 (1965)) have been employed to calculate, with the aid of a computer, the spherical aberrations of magnetic and electrostatic quadrupole lenses. Curves are presented showing each of the four spherical aberration coefficients of both types of quadrupole lens as functions of the object distance for different values of the excitation. The principal spherical aberration coefficient for the converging plane is always positive and has a minimum; the relation between excitation and object distance for the minimum value of this coefficient is presented graphically. The spherical aberration in the width of a linear image in the median plane for a magnetic quadrupole lens is compared

Card 1/2

L 36550-66

ACC NR: AP6015754

with the corresponding quantity for an analogous axially symmetric lens; for equal object distances and focal lengths, the quadrupole lens has the smaller spherical aberration. Orig. art. has: 4 formulas, 9 figures, and 1 table.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 001/ OTH REF: 001

Card 2/2 mlp

PETUSHKOV, I.S., inzh.; SHVAL'BE, V.A., inzh.; DYMNIKOV, V.S., inzh.

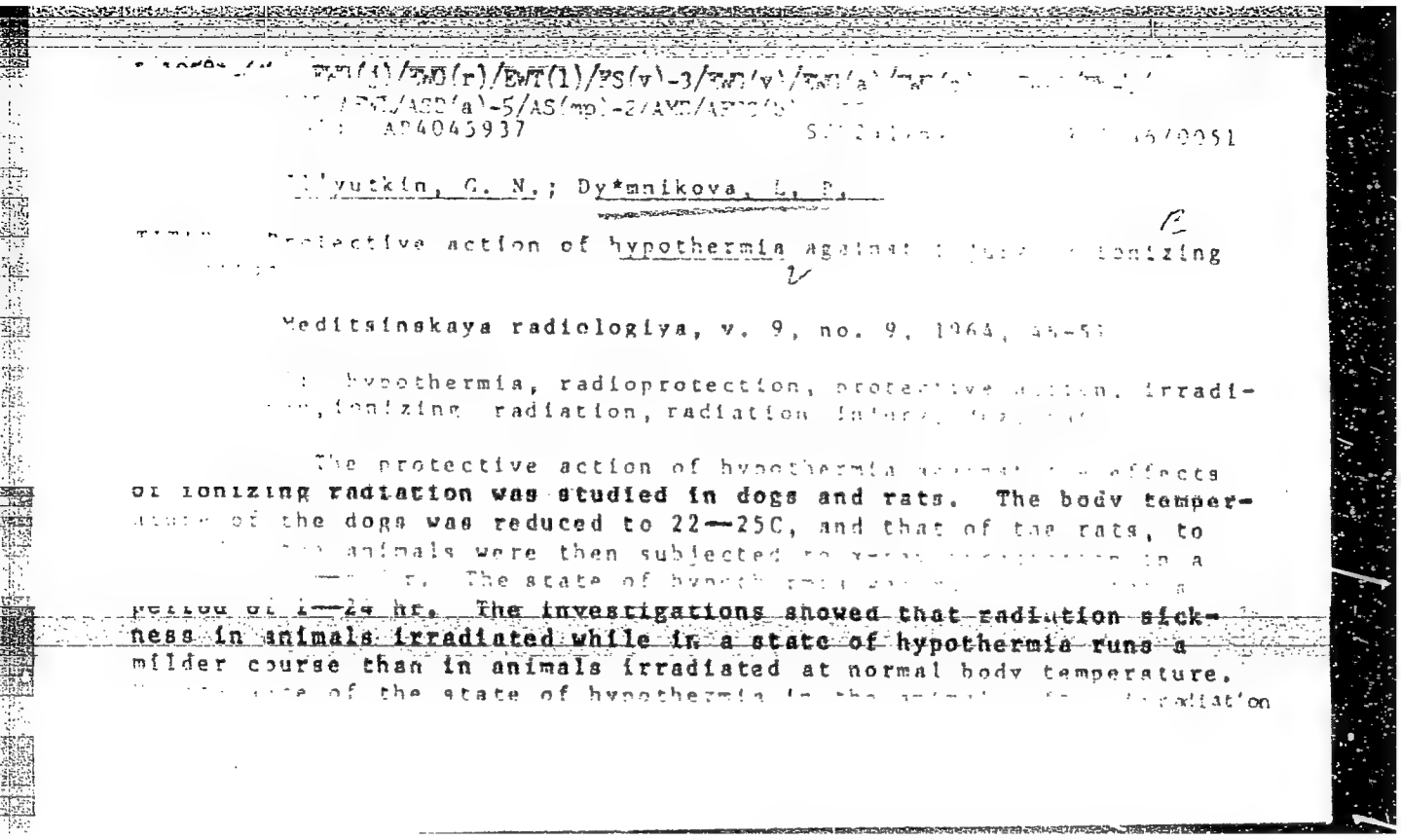
Selecting a type of power for Kuznetsk Basin mines. Ugol' 40 no.11:10-12 '65. (MIRA 18:11)

1. Kuznetskiy nauchno-issledovatel'skiy ugol'nyy institut.

BATUYEV, A.S.; DYMNIKOVA, L.P.

Influence of the cutting off of visual reception on various forms of motor acts in rabbits. Vop. srav. fiziol. anal. no. 1:72-78 '60.
(MIRA 14:4)

1. The Higher Nervous Activity Physiological Laboratory, University of Leningrad.
(CONDITIONED RESPONSE) (EYE--WOUNDS AND INJURIES)



EWT(1)/EWD(r)/EWT(1)/PS(v)-3/EWP(v)/EWP(a)

ACCESSION NR: AP4045937 S/0051/64/017/006/0951/0951

Ilyutkin, G. N.; Dymnikova, L. P.

TITLE: Protective action of hypothermia against [illegible] ionizing radiation

SOURCE: Meditsinskaya radiologiya, v. 9, no. 9, 1964, 45-51

TOPIC TAGS: hypothermia, radioprotection, protective action, irradiation, ionizing radiation, radiation injury, [illegible]

ABSTRACT: The protective action of hypothermia against the effects of ionizing radiation was studied in dogs and rats. The body temperature of the dogs was reduced to 22—25C, and that of the rats, to [illegible]. The animals were then subjected to [illegible] irradiation in a [illegible] chamber. The state of hypothermia was maintained for a period of 1—2½ hr. The investigations showed that radiation sickness in animals irradiated while in a state of hypothermia runs a milder course than in animals irradiated at normal body temperature. [illegible] use of the state of hypothermia in the [illegible] for [illegible] radiation

AP4045937

...ssening of the injurious effects of the ... radia-
...rease in the period of hypothermia was ass... with a
... radiation injury. Orig. art. has: ... tables.

... Institut fiziologii im. I. P. Pavlova ... fiziologii
...iology, AN SSSR); Voyenno-meditsinskaya ... ina
...I. M. Kirova(Academy of Military Me...

... 14Jan64 ENCL: 00 ...

... SUB CODE: 006 OTHER: 003

Card 2/2

Dyakovich, Ye. I.

DYAKOVICH, Ye. I.

"Clinical Aspect and Surgical Treatment of Penetrating Ulcers of the Stomach and Duodenum." Cand Med Sci, Khar'kov Medical Inst, Khar'kov 1955. (KL, No 8, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertation Defended at USSR Higher Educational Institutions. (14)

DYMNIKOVA, Ye. I.

DYMNIKOVA, Ye.I. (Khar'kov)

Clinical aspects and treatment of penetrating gastric and duodenal ulcers in adolescents. Klin.med. 35 no.11:97-101 N '57. (MIRA 11:2)

1. Iz kafedry obshchey khirurgii (zav. - prof. M.M.Levin) pediatricheskogo i sanitarno-gigiyenicheskogo fakul'tetov Khar'kovskogo meditsinskogo instituta (dir. - dotsent I.F.Kononenko)

(PEPTIC ULCER, perf.
in adolescents, clin. aspects & ther.)
(ADOLESCENCE, dis.
peptic ulcer, perf., clin. aspects & ther.)

DYMNIKOVA, Ye.I., kand.med.nauk

Clinical, diagnostic and therapeutic aspects of acute appendicitis in advanced old age. Sov.med. 26 no.8:43-47 Ag '62.
(MIRA 15:10)

1. Iz kafedry obshchey khirurgii pediatricheskogo i sanitarno-gigiyenicheskogo fakul'tetov (zav. - prof. M.M.Levin) Khar'kovskogo meditsinskogo instituta (rektor - dotsent B.A.Zadorozhnyy).
(APPENDICITIS) (GERIATRICS)

DYMNYY, Mikhail Gennadiyevich; VOYEVODIN, Ye.V., red.; ONOSHKO, N.G., tekhn.red.

[Communist from Izhorski] Kommunist s Izhorskogo. Leningrad, Lenizdat, 1959. 36 p. (MIRA 13:6)
(Labor and laboring classes)

DYMOTROWSKA M.

EXCERPTA MEDICA Sec.12 Vol.9/6 Ophthalmology Jun 55

899. KRWAWICZ T., DYMOTROWSKA M. and KOZUCHOWSKA I. Inst. med. Pracy Wsi, Klin. Okulistycznej Akad. med., Lublin. *Urazy narządu wzroku u pracowników rolnych. Injuries of the organ of vision in agricultural workers ANN.UNIV.LUBLIN, Sect.D, 1954, 8/1953 (167-212) Tables 19 Illus. 16

A clinical material of 598 cases of various eye injuries is statistically represented; the causes and sequelae are discussed. Finally the material is evaluated from the point of view of the diminution or loss of visual acuity. Forty-one eyes had to be enucleated, 47 remained blind. Szmyt - Łódź

L 7027-66 EWT(1)/T/EED(b)-3 IJP(c)
ACC NR: AP5026831 SOURCE CODE: UR/0286/65/000/017/0117/0117

AUTHOR: Frolova, V. S.; Yurovskiy, Kh. G.; Belonogov, B. I.; Fedichkina, A. A.; Dymov, A. F.

ORG: none

TITLE: A copying device for transferring a graphic image by photographic contact printing. Class 57, No. 174522 [announced by Organization of the Ministry of the Aviation Industry SSSR (Organizatsiya ministerstva aviatsionnoy promyshlennosti SSSR)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 117

TOPIC TAGS: photographic printing, printing machinery

ABSTRACT: This Author's Certificate introduces a copying device for transferring a graphic image by photographic contact printing. The installation contains an illuminator, a rotating table, and a clamping mechanism with vacuum contact between the original and the light-sensitive material. For airtight sealing during printing on large metal plates, the clamping mechanism is equipped with a cover made of an elastic film, e. g. polyethylene. This film covers the surface of the rotating table and is clamped around the edge of the table by an air-filled hose. This cover is wound on drums at the edge of the table.

UDC: 771.318.1

Card 1/2

L 7027-66
ACC NR: AP5026831

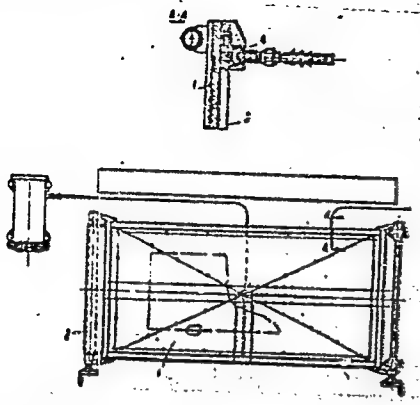


Fig. 1. 1--rotating table; 2--drums; 3--cover; 4--hose

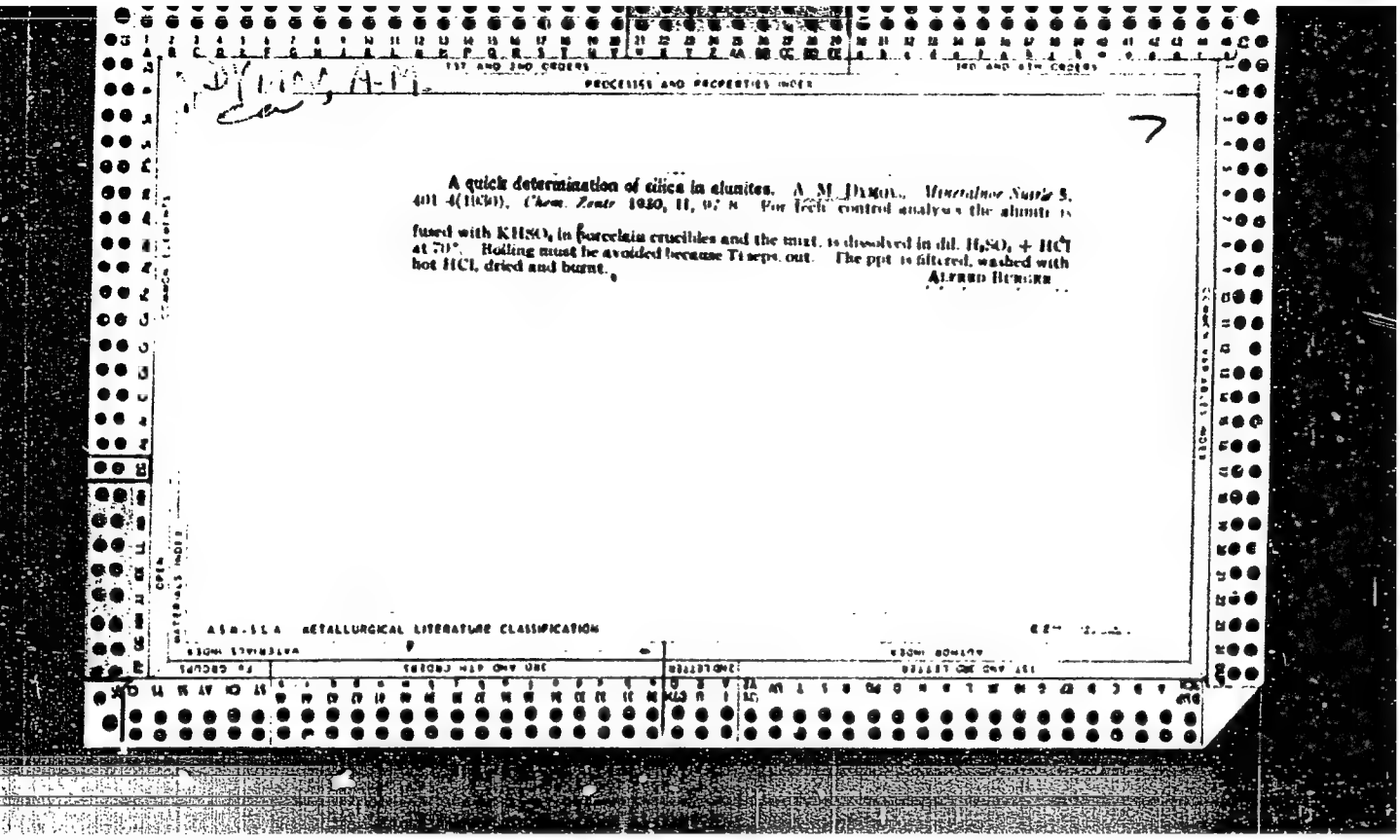
SUB CODE: IE/ SUBM DATE: 23Mar64/ ORIG REF: 000/ OTH REF: 000

BC
Card 2/2

DYMOV, A.G.

MORDVINTSEV, F.A., podpolkovnik meditsinskoy sluzhby; LEVTSOV, N.P., mayor administrativnoy sluzhby; DYMOV, A.G., starshiy leytenant meditsinskoy sluzhby

Using an aerosol generator operated by compressed air for disinsectization on ships. Voen.-med.zhur. no.7:73-74 Jl '56. (MLRA 9:11)
(SPRAING AND DUSTING EQUIPMENT)
(SHIPS--DISINFECTION)

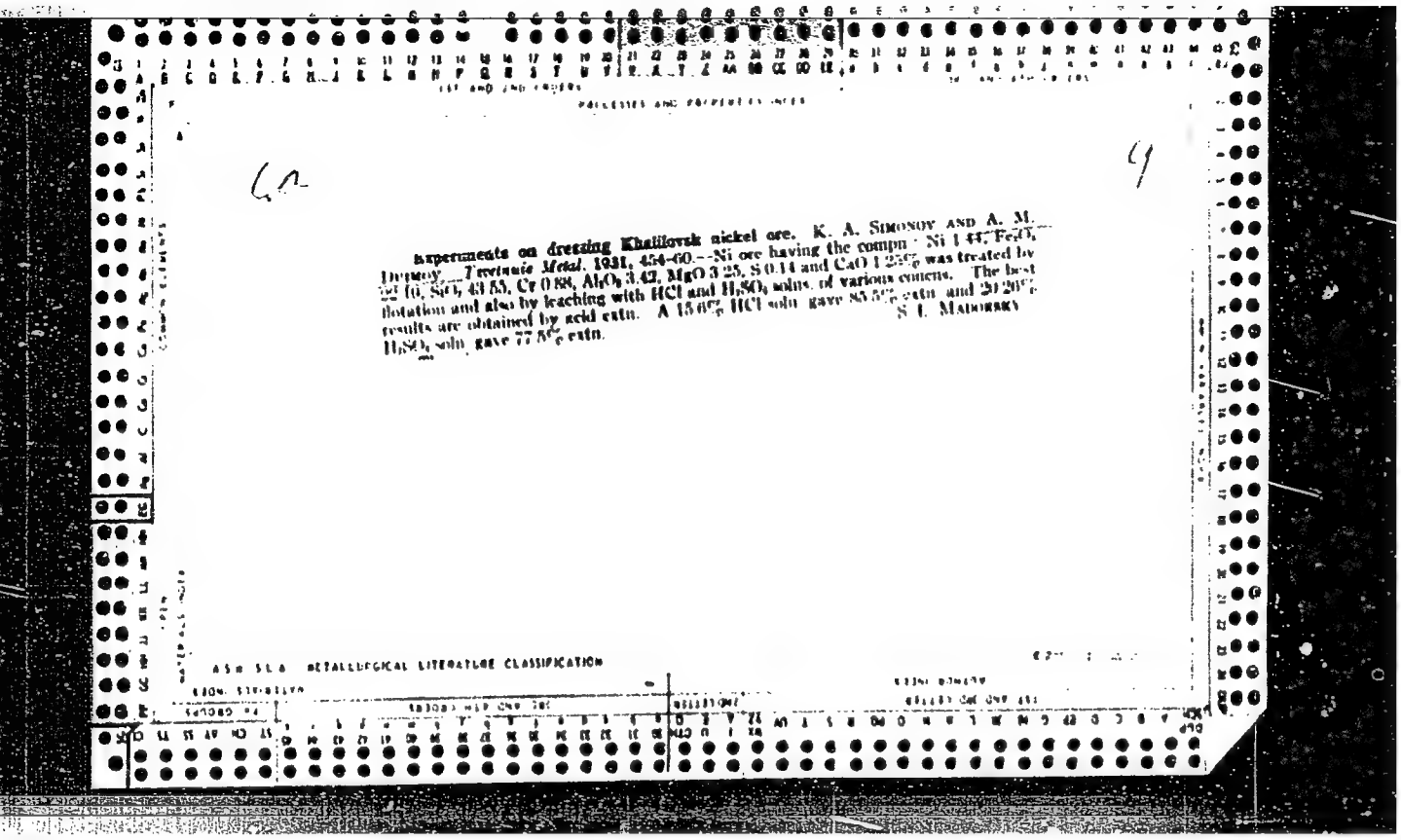


PROCESSES AND PROPERTIES INDEX

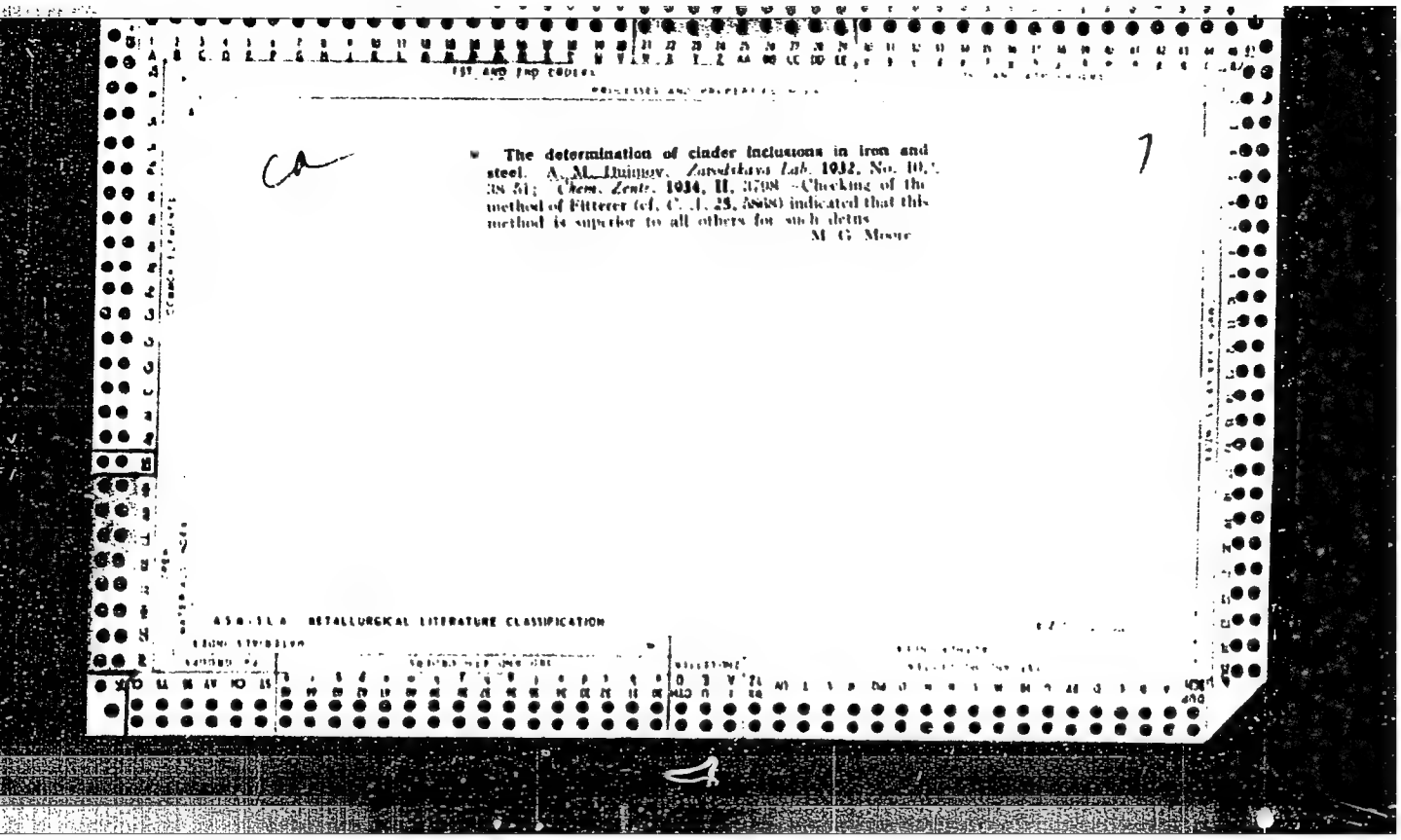
7

A quick determination of silica in alunites. A. M. [illegible], *Mineralnoe Syrie* **5**, 401-4(1930). *Chem. Zentr.* 1930, II, 97.—For tech. control analyses the alunite is fused with $KHSO_4$ in porcelain crucibles and the mass is dissolved in dil. H_2SO_4 + HCl at 70°. Boiling must be avoided because Ti seps. out. The ppt. is filtered, washed with hot HCl, dried and burned. Alfred Bergen

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



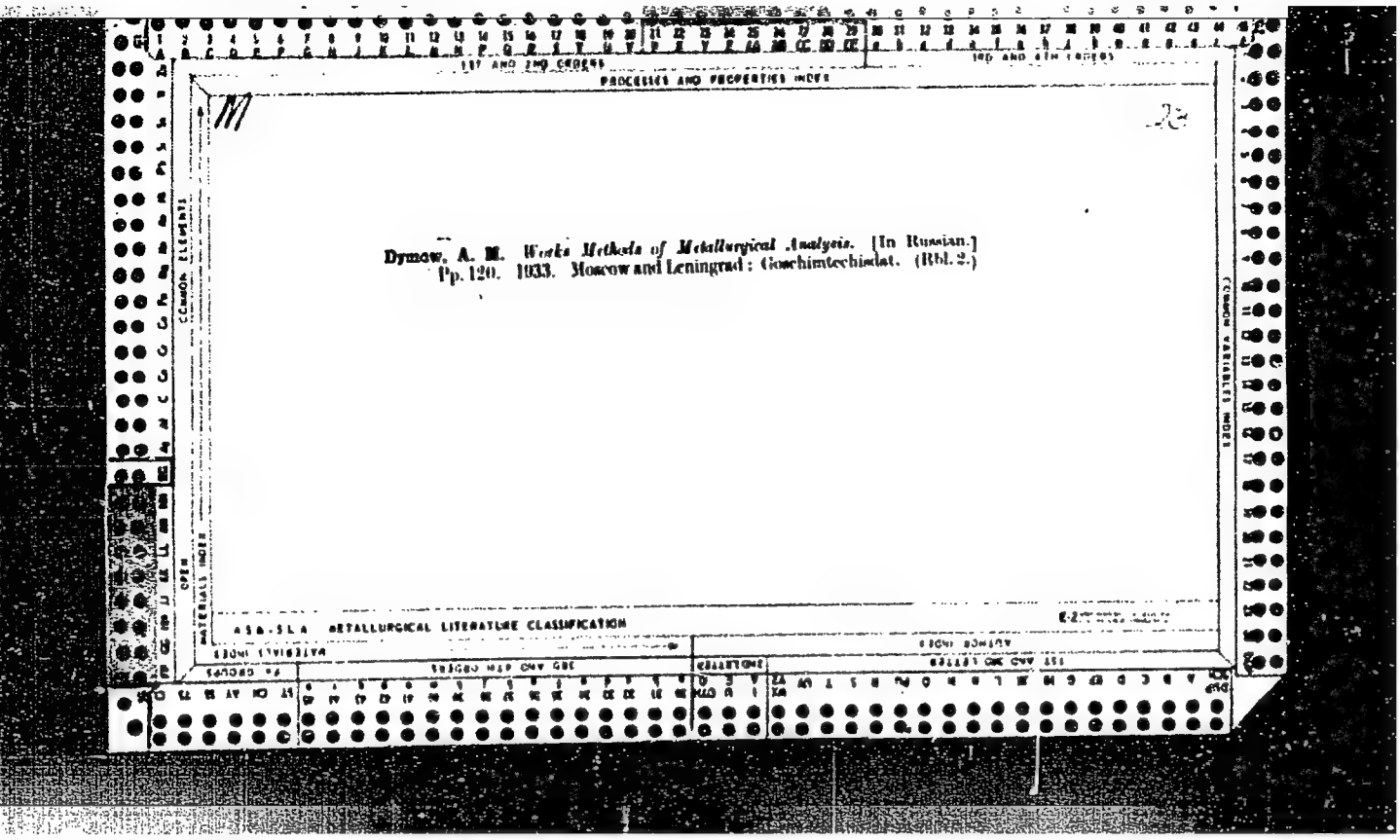
Experiments on dressing Khalilovsk nickel ore. K. A. Smosov and A. M. Dymov. *Tsvetnie Metal.* 1931, 454-60.—Ni ore having the compn.: Ni 1.44, FeO, Fe$_2$O$_3$ 10, SiO$_2$ 43.55, Cr 0.88, Al$_2$O$_3$ 3.42, MgO 3.25, S 0.14 and CaO 1.25% was treated by flotation and also by leaching with HCl and H$_2$SO$_4$ solns. of various concns. The best results are obtained by acid extn. A 15.6% HCl soln. gave 85.5% extn. and 20.20% H$_2$SO$_4$ soln. gave 77.8% extn. S. L. Madorsky



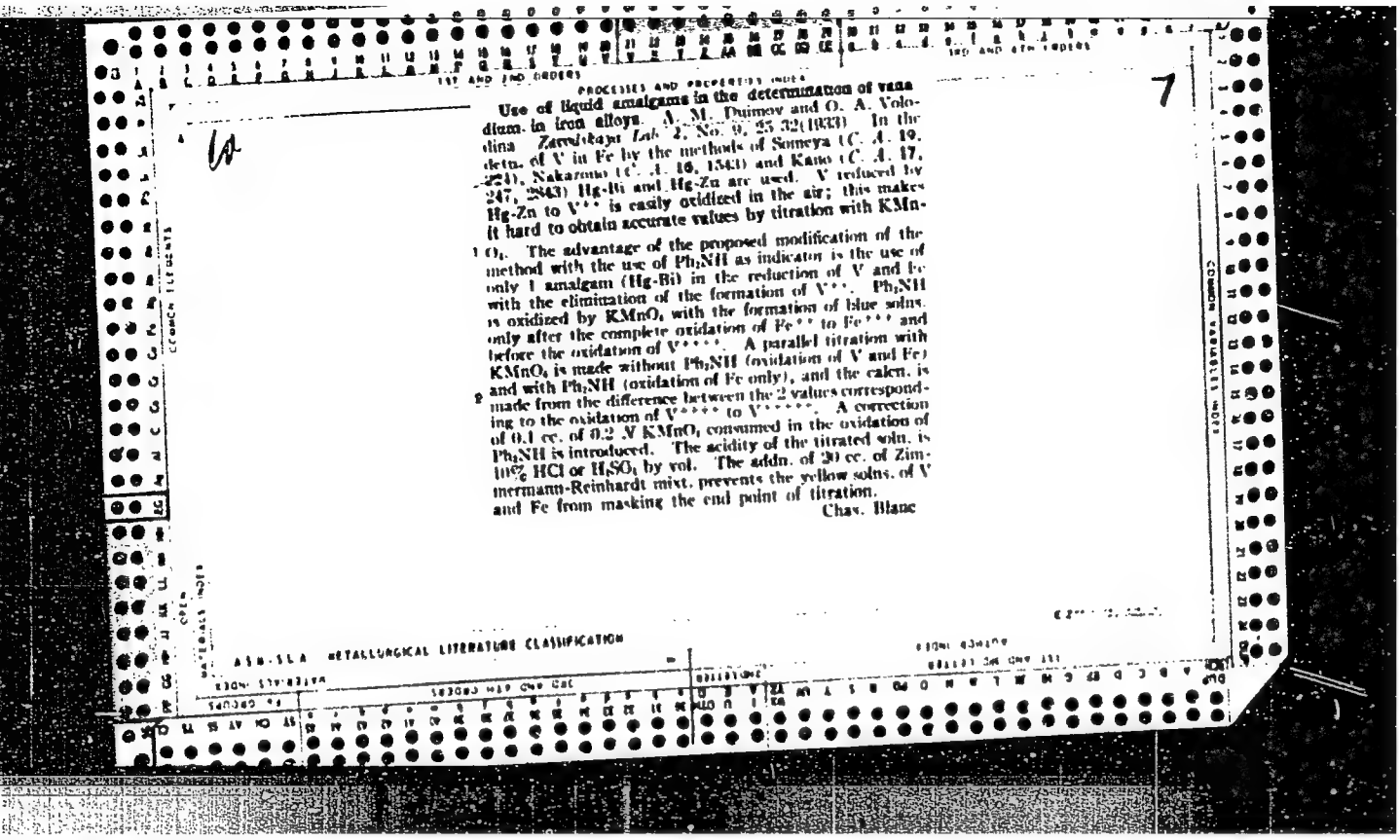
The determination of cinder inclusions in iron and steel. A. M. Ilminov. *Zavodskaya Lab.* 1932, No. 10, 38-51; *Chem. Zentr.* 1934, II, 3708.—Checking of the method of Fitterer (cf. C. A. 25, 3818) indicated that this method is superior to all others for such detns.

M. G. Moore

ASM-TLA METALLURGICAL LITERATURE CLASSIFICATION



Dymow, A. M. *Works Methods of Metallurgical Analysis.* [In Russian.] Pp. 120. 1933. Moscow and Leningrad: Goschimtechizdat. (Bbl. 2.)

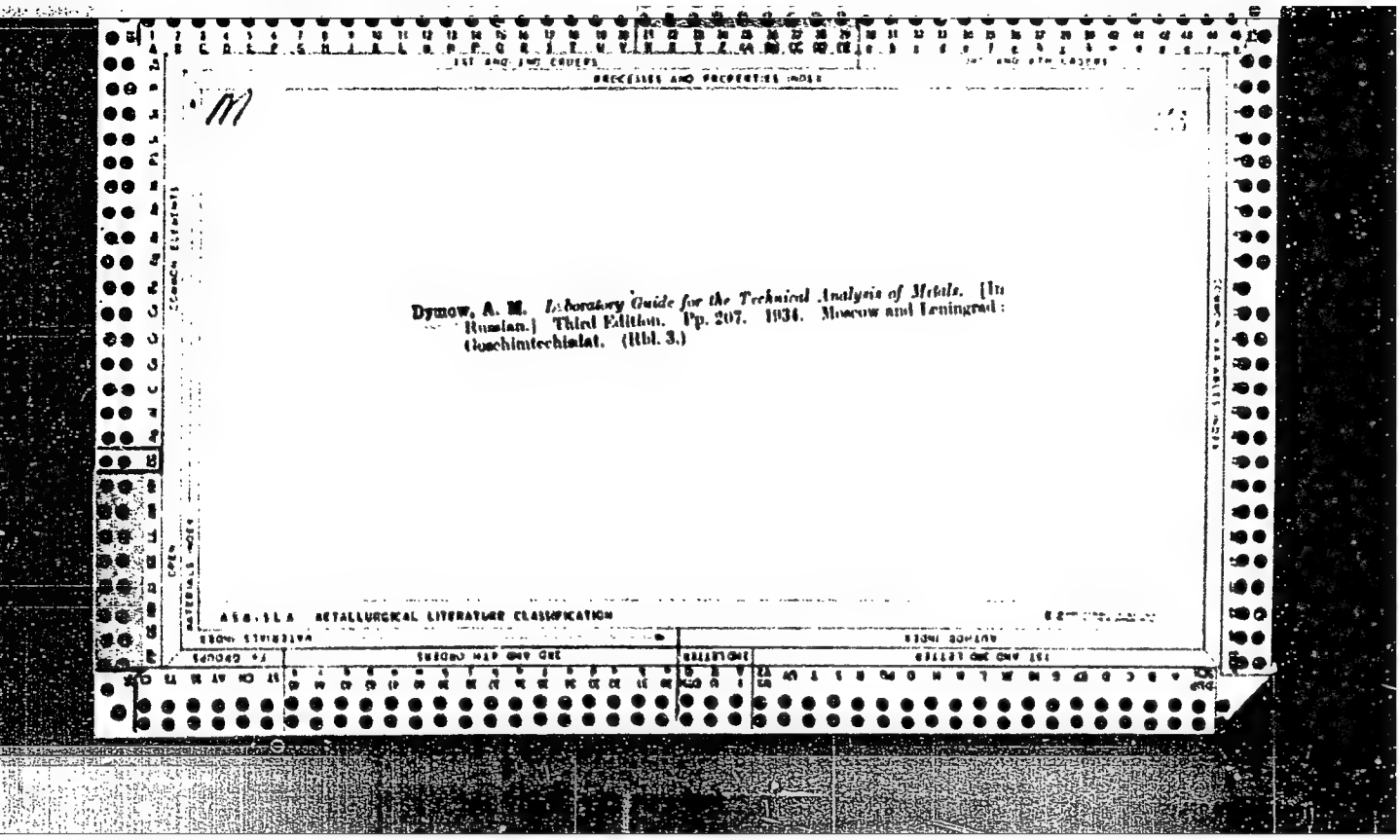


PROCESSES AND PROPERTIES INDEX

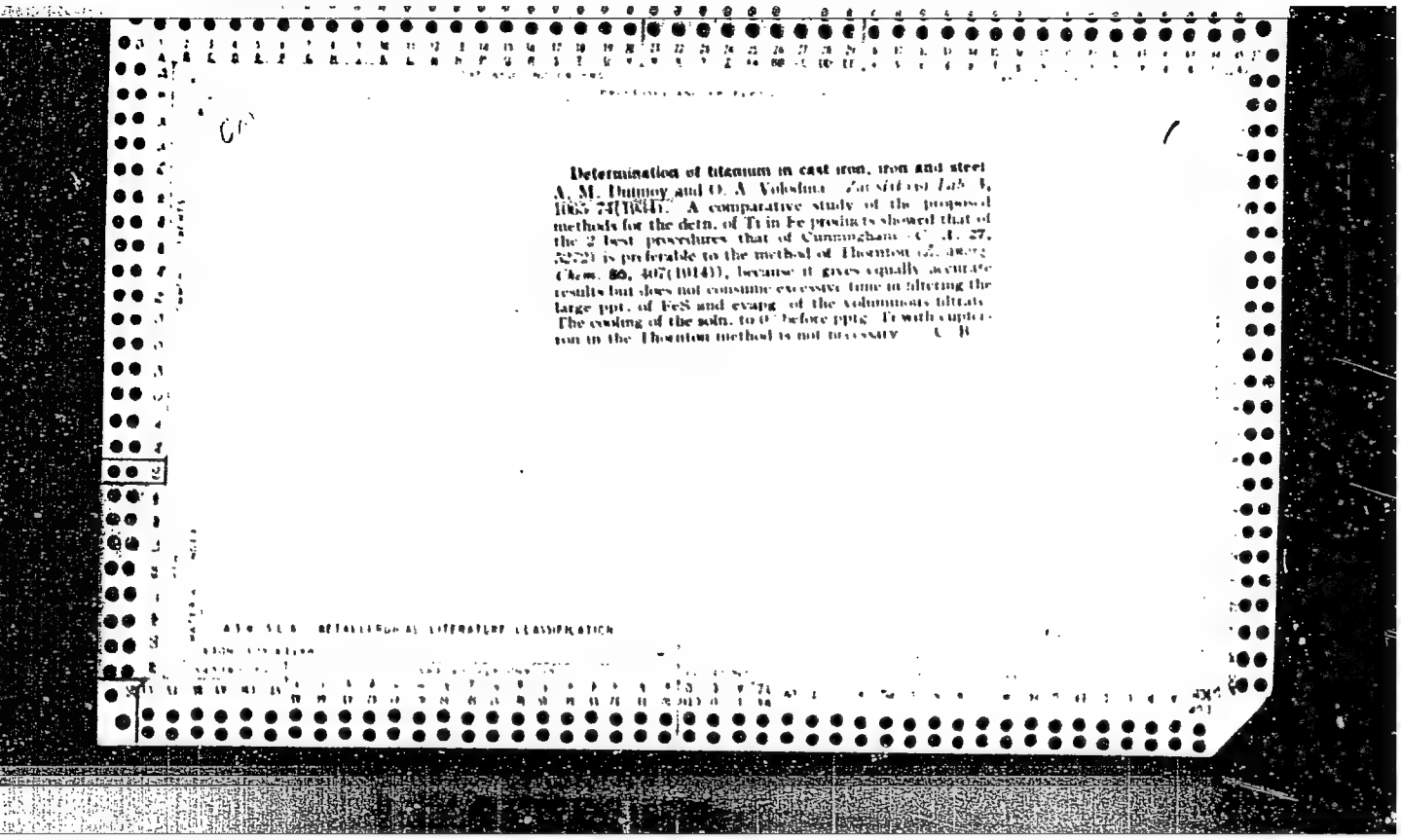
Use of liquid amalgams in the determination of vanadium in iron alloys. A. M. Dujmov and O. A. Volodina. *Zavod. Lab.* 2, No. 9, 25-32(1933). In the detn. of V in Fe by the methods of Someya (C. A. 19, 224), Nakazono (C. A. 16, 1543) and Kano (C. A. 17, 247, 2843) Hg-Bi and Hg-Zn are used. V reduced by Hg-Zn to V^{++} is easily oxidized in the air; this makes it hard to obtain accurate values by titration with $KMnO_4$. The advantage of the proposed modification of the method with the use of Ph_2NH as indicator is the use of only 1 amalgam (Hg-Bi) in the reduction of V and Fe with the elimination of the formation of V^{+++}. Ph_2NH is oxidized by $KMnO_4$ with the formation of blue solns. only after the complete oxidation of Fe^{++} to Fe^{+++} and before the oxidation of V^{++++}. A parallel titration with $KMnO_4$ is made without Ph_2NH (oxidation of V and Fe) and with Ph_2NH (oxidation of Fe only), and the calcn. is made from the difference between the 2 values corresponding to the oxidation of V^{++++} to V^{+++++}. A correction of 0.1 cc. of 0.2 *N* $KMnO_4$ consumed in the oxidation of Ph_2NH is introduced. The acidity of the titrated soln. is 10% HCl or H_2SO_4 by vol. The addn. of 20 cc. of Zimmermann-Reinhardt mixt. prevents the yellow solns. of V and Fe from masking the end point of titration.

Chas. Blanc

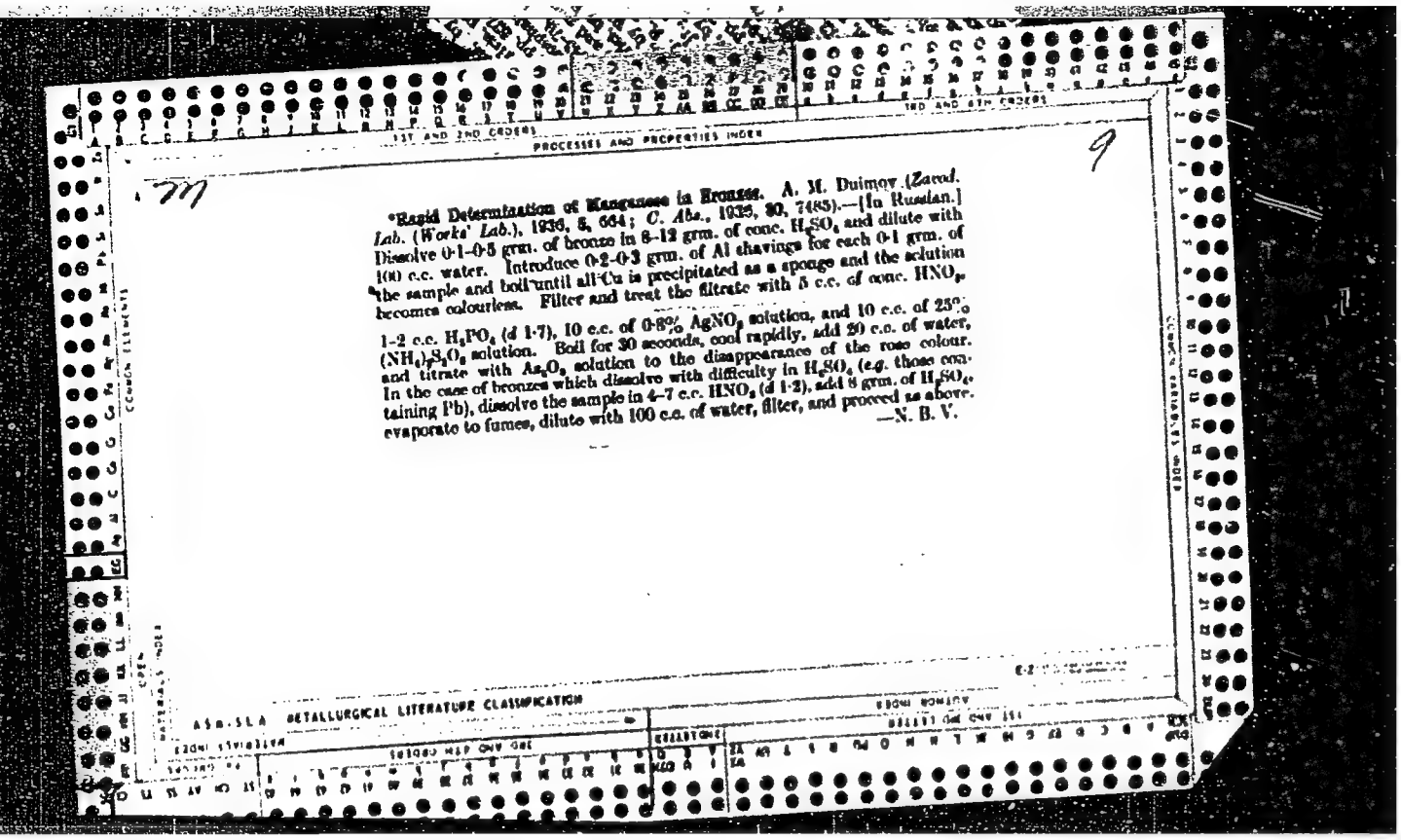
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Dymow, A. M. *Laboratory Guide for the Technical Analysis of Metals.* [In Russian.] Third Edition. Pp. 207. 1934. Moscow and Leningrad: Goschimtechizdat. (Rbl. 3.)



Determination of titanium in cast iron, iron and steel
A. M. Dunney and O. A. Yoloshin. *Zavodskaya Lab.* 9, 1065-73(1940). A comparative study of the proposed methods for the detn. of Ti in Fe products showed that of the 2 best procedures that of Cunningham (*C. A.* 37, 5222) is preferable to the method of Thornton (*J. Am. Chem. Soc.* 36, 407(1914)), because it gives equally accurate results but does not consume excessive time in filtering the large ppt. of FeS and evapg. of the voluminous filtrate. The cooling of the soln. to 0° before ppts. To with cupferron in the Thornton method is not necessary. C. B.

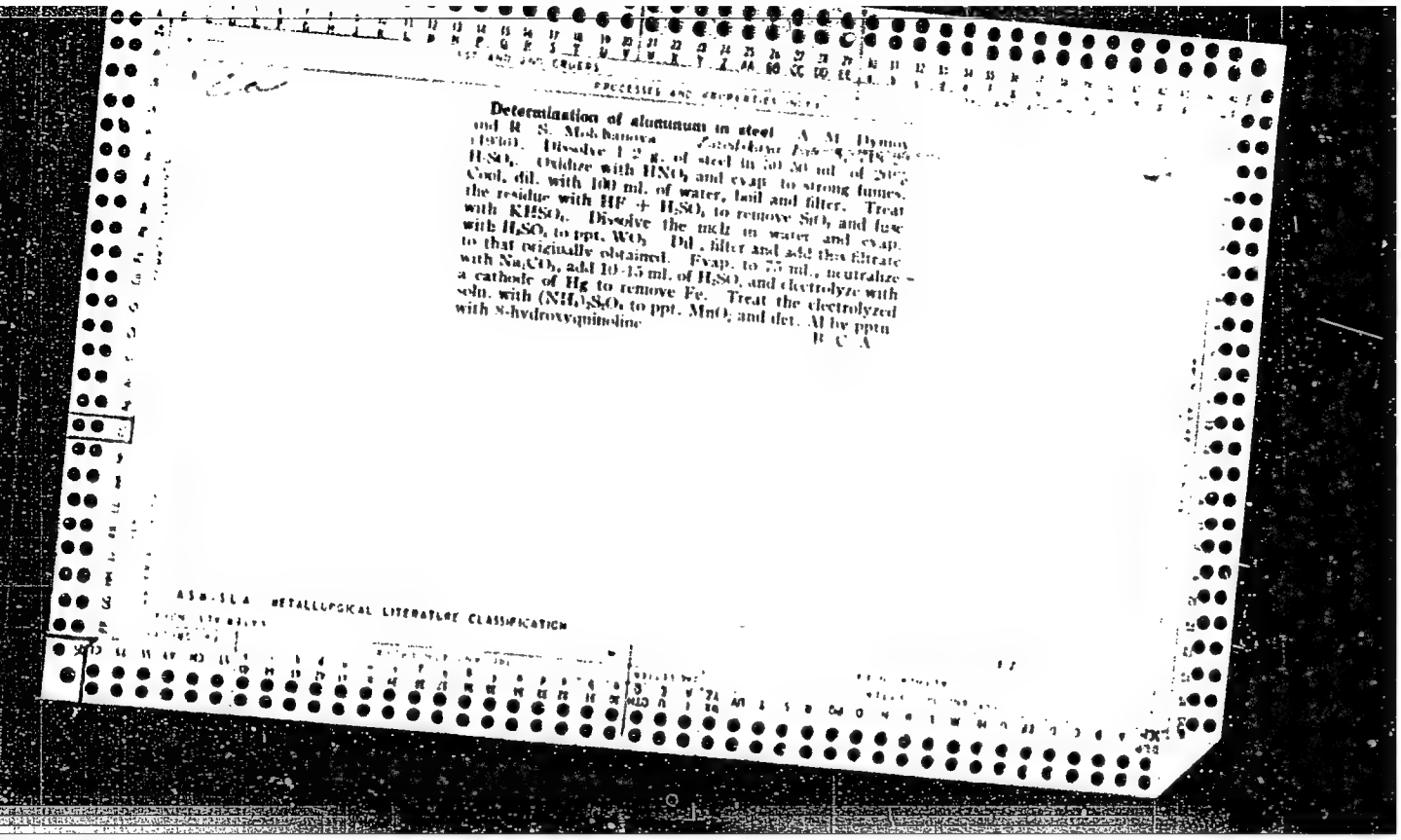


PROCESSES AND PROPERTIES INDEX

9

Rapid Determination of Manganese in Bronze. A. M. Duimov. (*Zavod. Lab.* (*Works' Lab.*), 1936, 5, 564; *C. Abs.*, 1936, 30, 7485).—[In Russian.] Dissolve 0·1–0·5 grm. of bronze in 8–12 grm. of conc. H_2SO_4 and dilute with 100 c.c. water. Introduce 0·2–0·3 grm. of Al shavings for each 0·1 grm. of the sample and boil until all Cu is precipitated as a sponge and the solution becomes colourless. Filter and treat the filtrate with 5 c.c. of conc. HNO_3, 1–2 c.c. H_3PO_4 (d 1·7), 10 c.c. of 0·8% $AgNO_3$ solution, and 10 c.c. of 25% $(NH_4)_2S_2O_8$ solution. Boil for 30 seconds, cool rapidly, add 20 c.c. of water, and titrate with As_2O_3 solution to the disappearance of the rose colour. In the case of bronzes which dissolve with difficulty in H_2SO_4 (*e.g.* those containing Pb), dissolve the sample in 4–7 c.c. HNO_3 (d 1·2), add 8 grm. of H_2SO_4, evaporate to fumes, dilute with 100 c.c. of water, filter, and proceed as above.
—N. B. V.

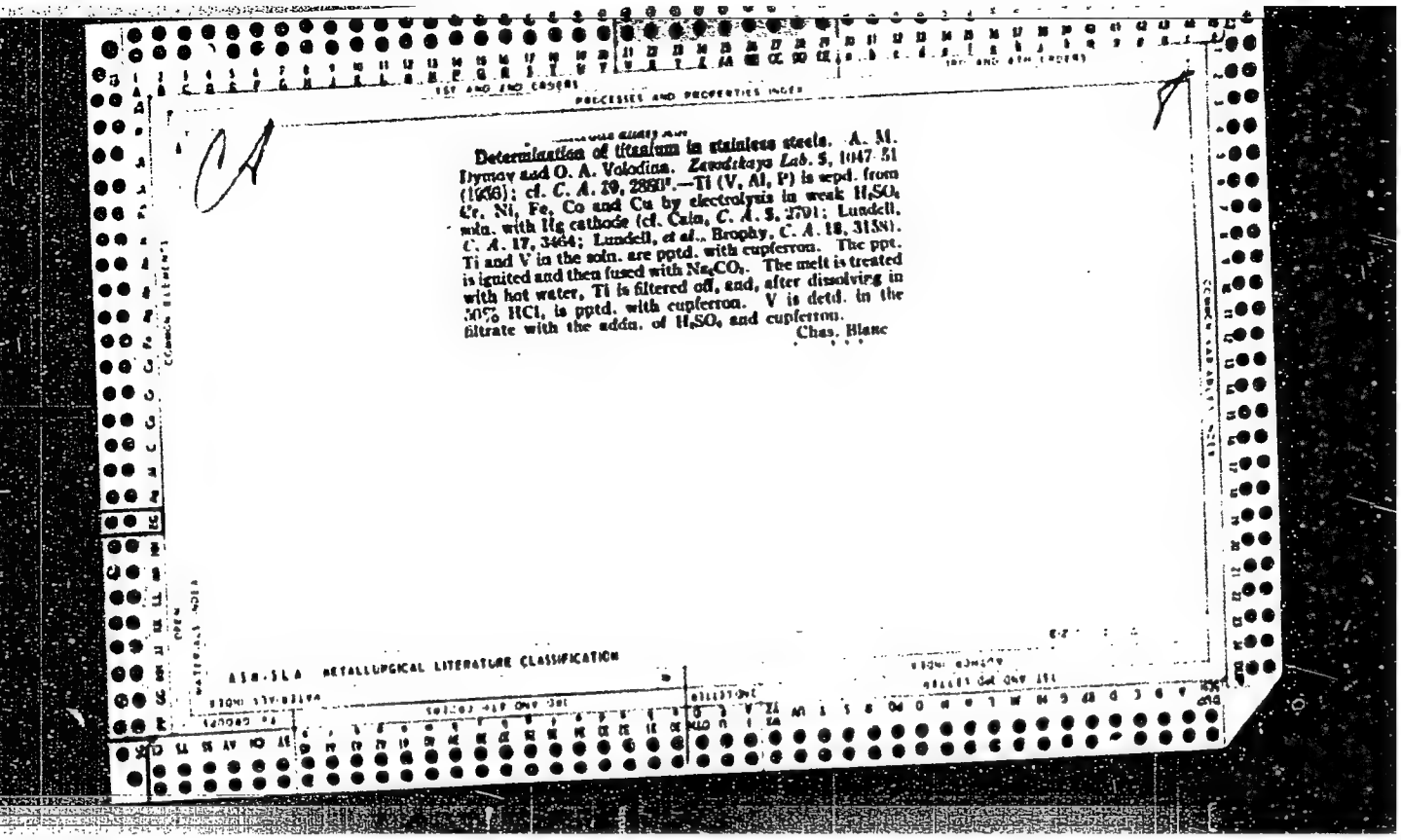
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Determination of aluminum in steel A. M. Dymov and R. S. Makhanova. *Zavodskaya Lab.* 9, 1318 (1940). Dissolve 1.2 g. of steel in 50–60 ml. of 25% H_2SO_4. Oxidize with HNO_3 and evap. to strong fumes. Cool, dil. with 100 ml. of water, boil and filter. Treat the residue with HF + H_2SO_4 to remove Si; and fuse with $KHSO_4$. Dissolve the melt in water and evap. with H_2SO_4 to ppt. WO_3. Dil., filter and add this filtrate to that originally obtained. Evap. to 75 ml., neutralize with Na_2CO_3, add 10–15 ml. of H_2SO_4, and electrolyze with a cathode of Hg to remove Fe. Treat the electrolyzed soln. with $(NH_4)_2S_2O_8$ to ppt. MnO_2 and det. Al by pptn with 8-hydroxyquinoline.

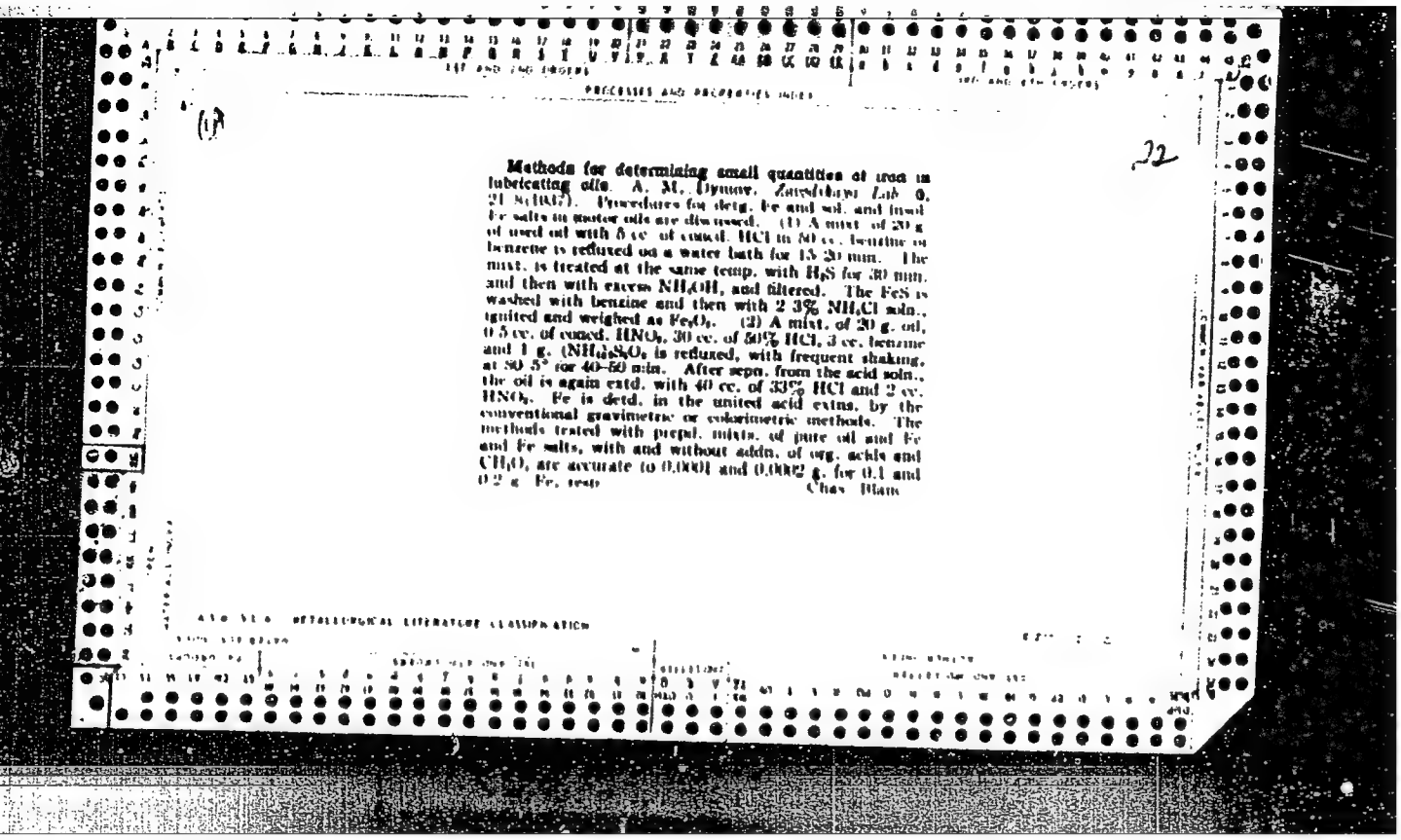
B C A

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

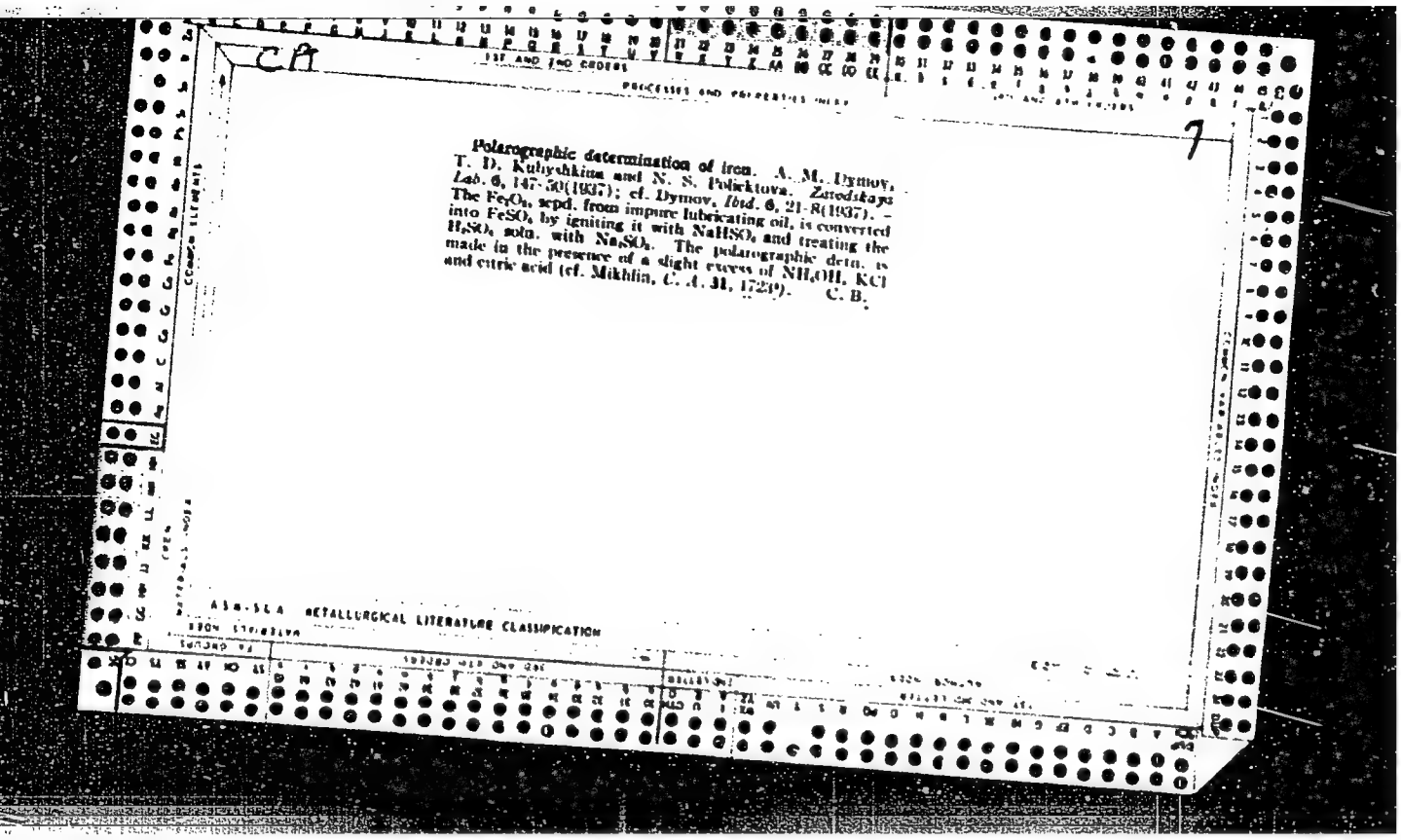


Determination of titanium in stainless steels. A. M. Dymov and O. A. Volodina. *Zavodskaya Lab.* 5, 1047-51 (1936); cf. *C. A.* 29, 2881⁹.—Ti (V, Al, P) is sepd. from Cr, Ni, Fe, Co and Cu by electrolysis in weak H_2SO_4 soln. with Hg cathode (cf. Cain, *C. A.* 5, 3791; Lundell, *C. A.* 17, 3464; Lundell, *et al.*, Brophy, *C. A.* 18, 3158). Ti and V in the soln. are pptd. with cupferron. The ppt. is ignited and then fused with Na_2CO_3. The melt is treated with hot water, Ti is filtered off, and, after dissolving in 50% HCl, is pptd. with cupferron. V is detd. in the filtrate with the addn. of H_2SO_4 and cupferron.

Chas. Blanc



Methods for determining small quantities of iron in lubricating oils. A. M. Dymov. *Zavodskaya Lab.* 6, 21–8(1937). Procedures for detg. Fe and sol. and insol. Fe salts in motor oils are discussed. (1) A mixt. of 20 g. of used oil with 5 cc. of concd. HCl in 50 cc. benzine or benzene is refluxed on a water bath for 15–20 min. The mixt. is treated at the same temp. with H_2S for 30 min. and then with excess NH_4OH, and filtered. The FeS is washed with benzine and then with 2–3% NH_4Cl soln., ignited and weighed as Fe_2O_3. (2) A mixt. of 20 g. oil, 0.5 cc. of concd. HNO_3, 30 cc. of 50% HCl, 3 cc. benzine and 1 g. $(NH_4)_2S_2O_8$ is refluxed, with frequent shaking, at 80–5° for 40–50 min. After sepn. from the acid soln., the oil is again extd. with 40 cc. of 33% HCl and 2 cc. HNO_3. Fe is detd. in the united acid extns. by the conventional gravimetric or colorimetric methods. The methods tested with prepd. mixts. of pure oil and Fe and Fe salts, with and without addn. of org. acids and CH_2O, are accurate to 0.0001 and 0.0002 g. for 0.1 and 0.2 g. Fe, resp. Chas. Blum



CA

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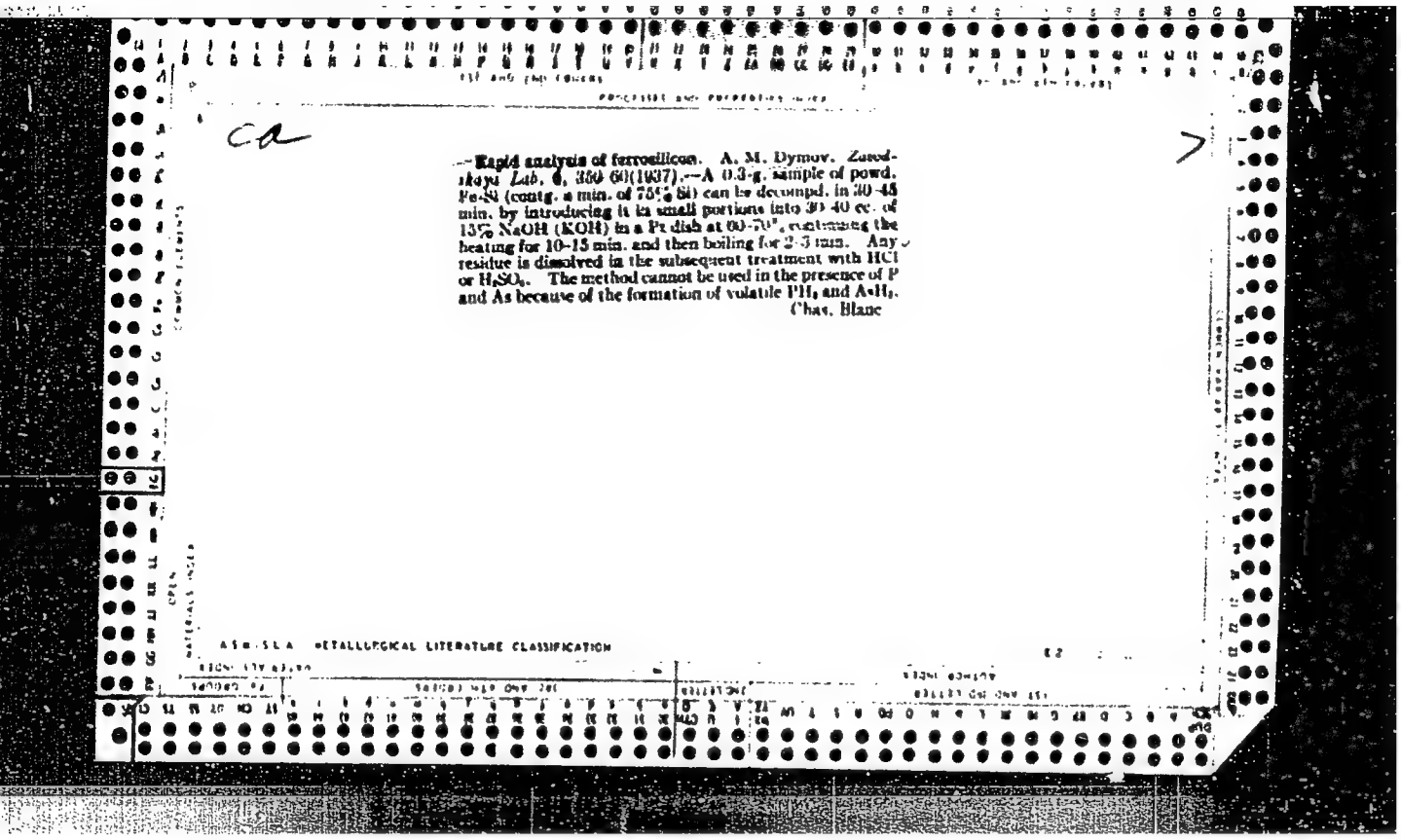
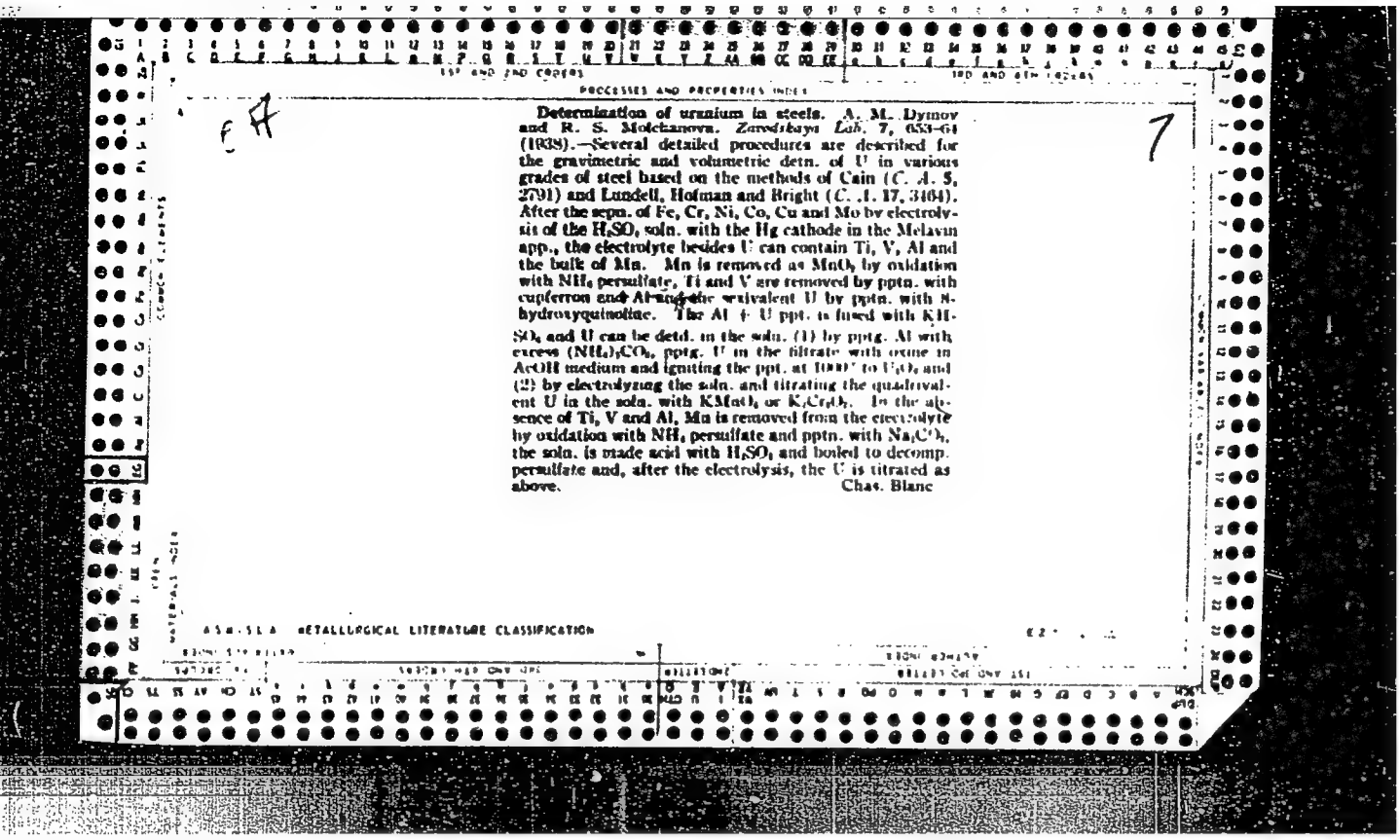
Polarographic determination of iron. A. M. Dymov, T. D. Kulyshkina and N. S. Policktova. *Zavodskaya Lab.* 6, 147-50(1937); cf. Dymov, *Ibid.* 6, 21-8(1937). — The Fe_2O_3 sepd. from impure lubricating oil, is converted into $FeSO_4$ by igniting it with $NaHSO_4$ and treating the H_2SO_4 soln. with Na_2SO_3. The polarographic detn. is made in the presence of a slight excess of NH_4OH, KCl and citric acid (cf. Mikhlin, *C. A.* 31, 1729). C. B.

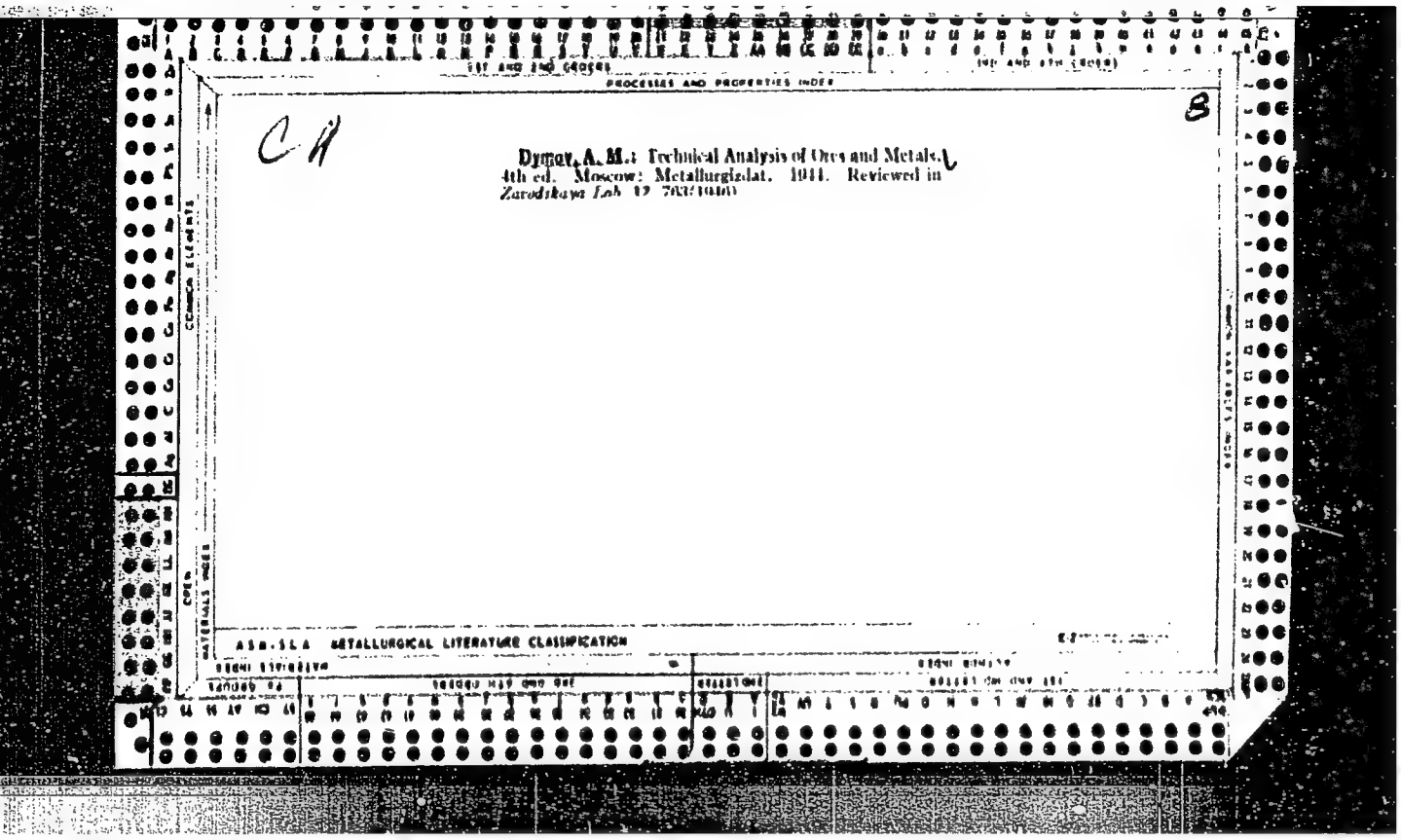
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



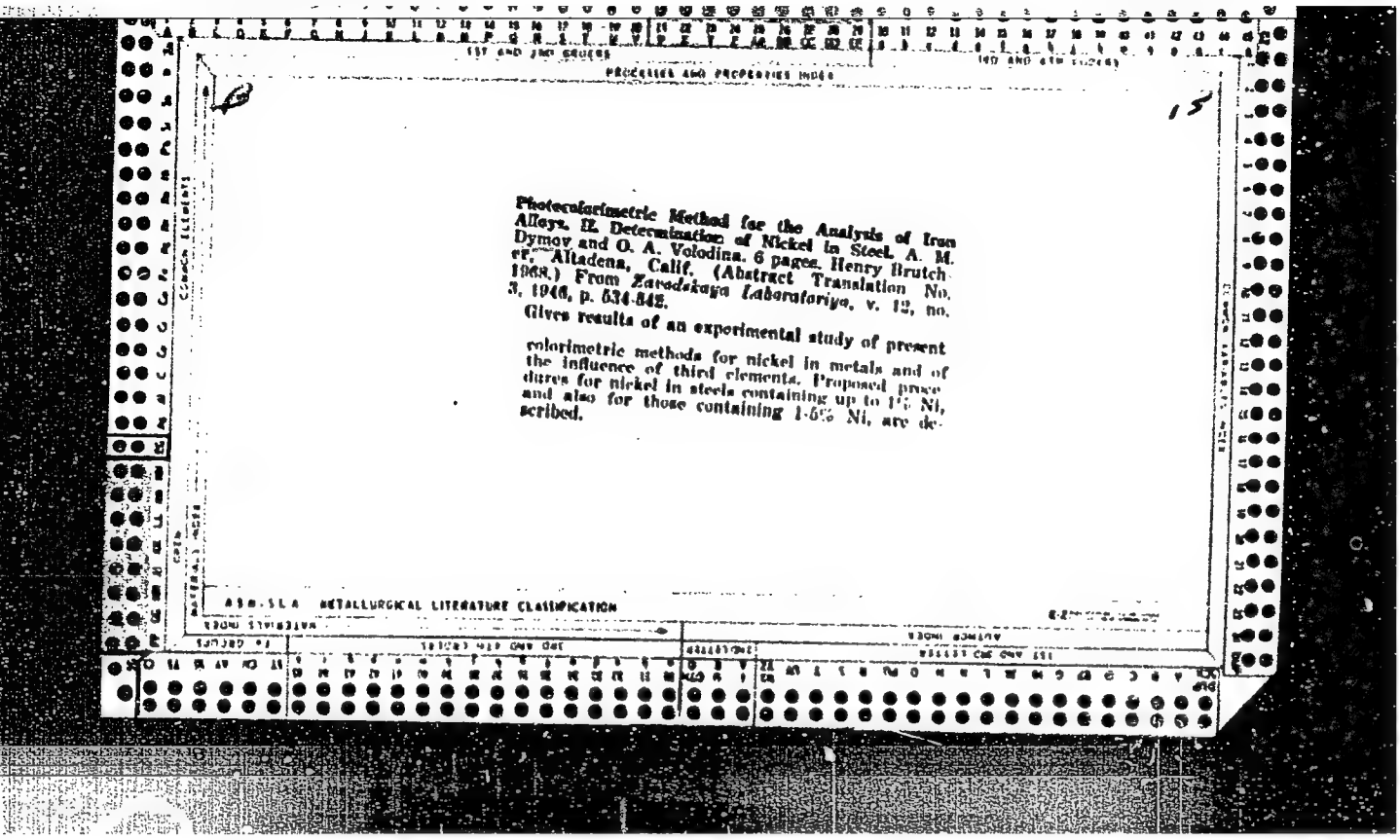
—**Rapid analysis of ferrosilicon.** A. M. Dymov. *Zavodskaya Lab.*, 6, 359-60(1937).—A 0.3-g. sample of powd. Fe-Si (contg. a min. of 75% Si) can be decompd. in 30-45 min. by introducing it in small portions into 30-40 cc. of 15% NaOH (KOH) in a Pt dish at 60-70°, continuing the heating for 10-15 min. and then boiling for 2-3 min. Any residue is dissolved in the subsequent treatment with HCl or H_2SO_4. The method cannot be used in the presence of P and As because of the formation of volatile PH_3 and AsH_3.
Chas. Blanc



Determination of uranium in steels. A. M. Dymov and R. S. Molchanova. *Zavodskaya Lab.* 7, 653–64 (1938).—Several detailed procedures are described for the gravimetric and volumetric detn. of U in various grades of steel based on the methods of Cain (*C. A.* 5, 2791) and Lundell, Hoffman and Bright (*C. A.* 17, 3464). After the sepn. of Fe, Cr, Ni, Co, Cu and Mo by electrolysis of the H_2SO_4 soln. with the Hg cathode in the Melaven app., the electrolyte besides U can contain Ti, V, Al and the bulk of Mn. Mn is removed as MnO_2 by oxidation with NH_4 persulfate, Ti and V are removed by pptn. with cupferron and Al and the equivalent U by pptn. with 8-hydroxyquinoline. The Al + U ppt. is fused with $KHSO_4$ and U can be detd. in the soln. (1) by pptg. Al with excess $(NH_4)_2CO_3$, pptg. U in the filtrate with ozone in AcOH medium and igniting the ppt. at 1000° to U_3O_8, and (2) by electrolyzing the soln. and titrating the quadrivalent U in the soln. with $KMnO_4$ or $K_2Cr_2O_7$. In the absence of Ti, V and Al, Mn is removed from the electrolyte by oxidation with NH_4 persulfate and pptn. with Na_2CO_3, the soln. is made acid with H_2SO_4 and boiled to decomp. persulfate and, after the electrolysis, the U is titrated as above. Chas. Blanc

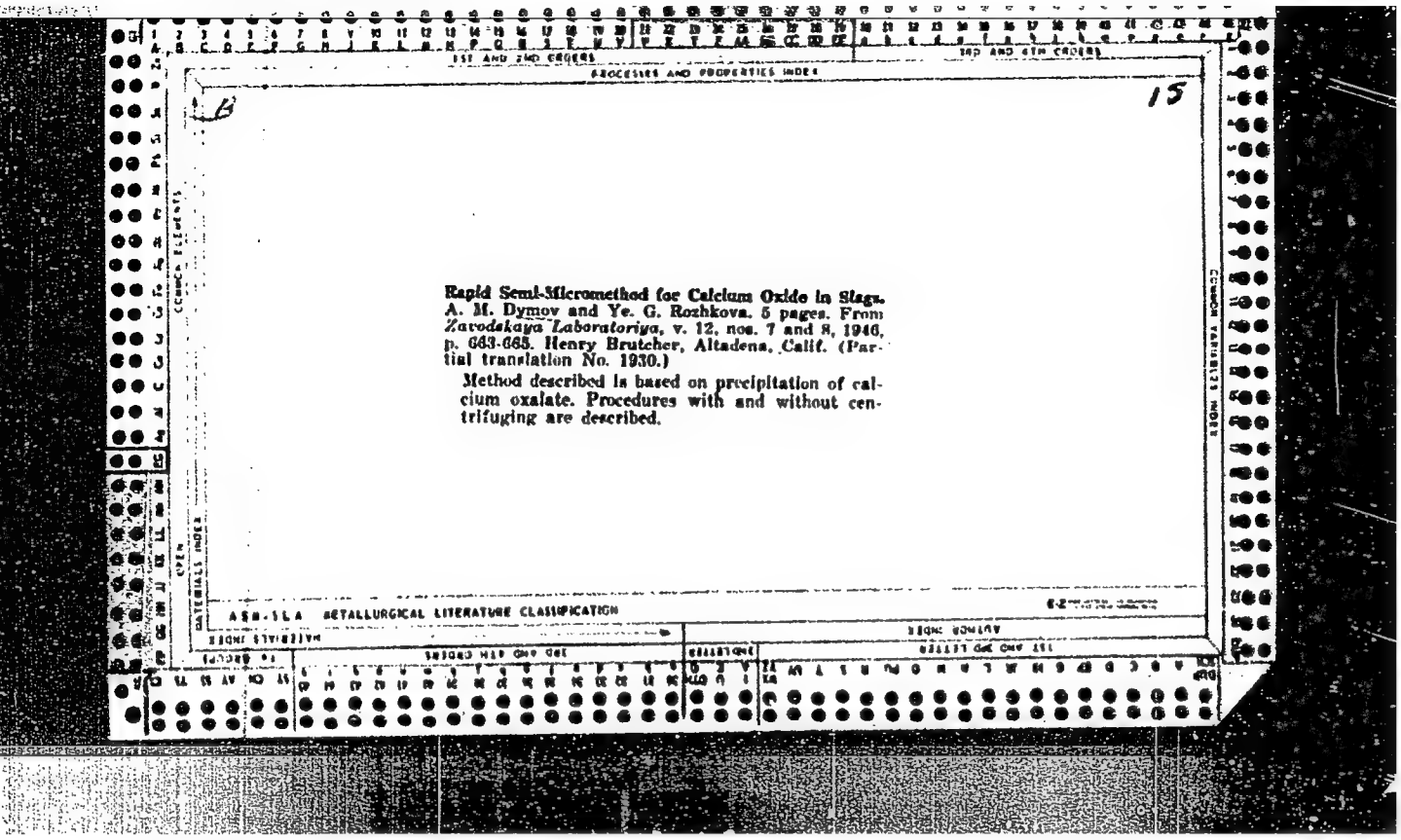


Dymov, A. M.: Technical Analysis of Ores and Metals. 4th ed. Moscow: Metallurgizdat, 1941. Reviewed in *Zavodskaya Lab* 12 7(3):1040



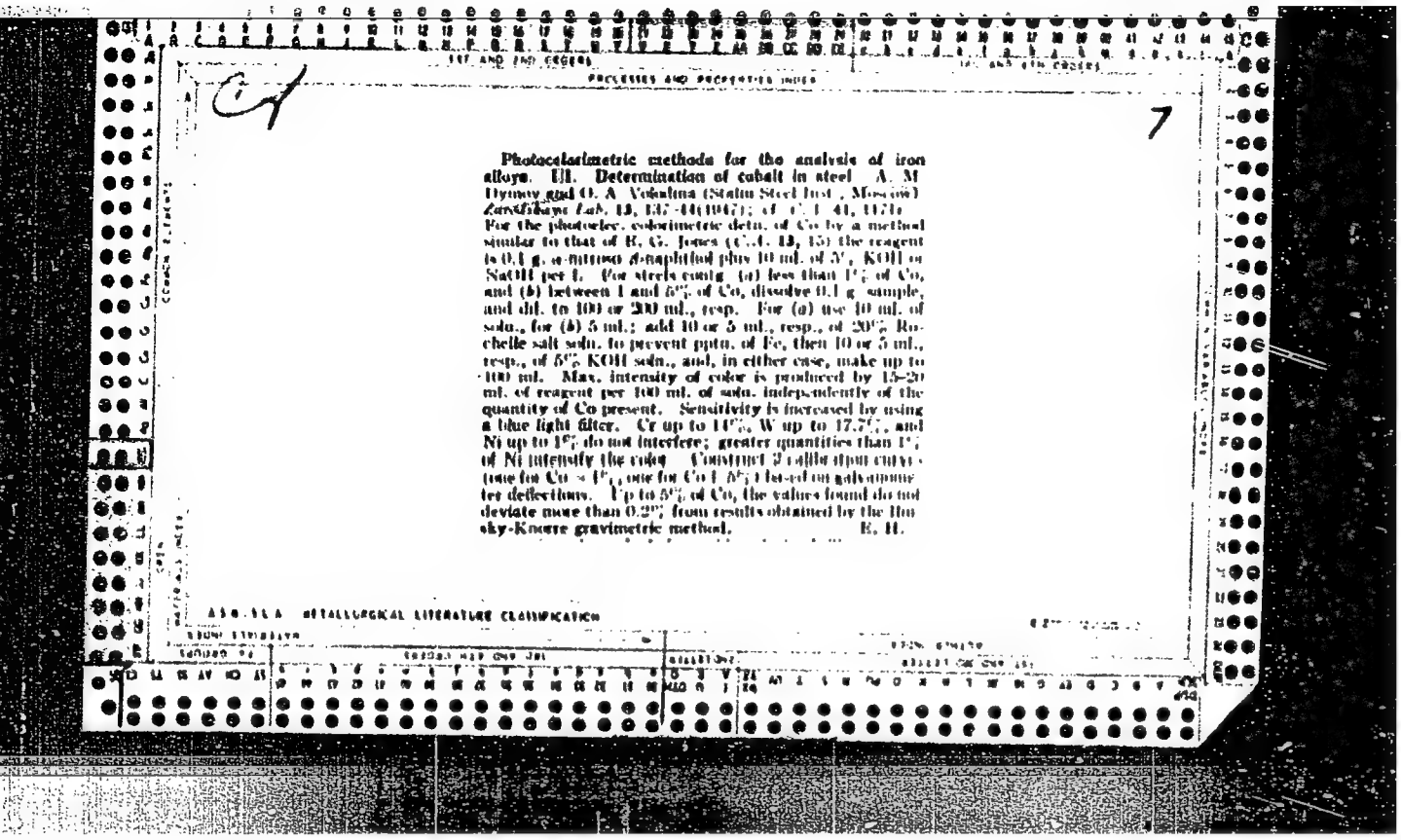
Photocolorimetric Method for the Analysis of Iron Alloys. II. Determination of Nickel in Steel. A. M. Dymov and O. A. Volodina. 6 pages. Henry Brutcher, Altadena, Calif. (Abstract Translation No. 1968.) From *Zavodskaya Laboratoriya*, v. 12, no. 3, 1946, p. 534-542.

Gives results of an experimental study of present colorimetric methods for nickel in metals and of the influence of third elements. Proposed procedures for nickel in steels containing up to 1% Ni, and also for those containing 1-6% Ni, are described.

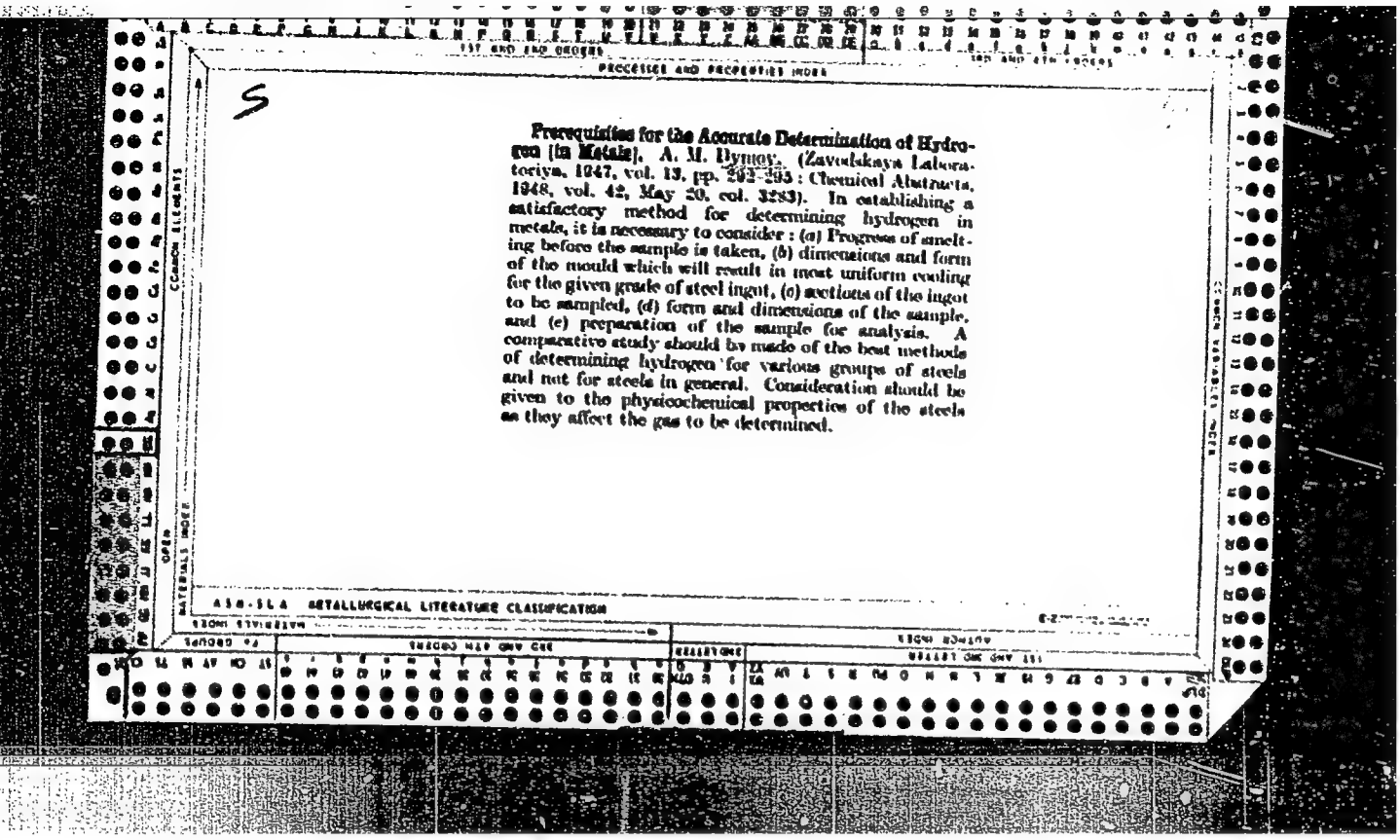


Rapid Semi-Micromethod for Calcium Oxide in Slags. A. M. Dymov and Ye. G. Rozhkova. 5 pages. From *Zavodskaya Laboratoriya*, v. 12, nos. 7 and 8, 1946, p. 663-665. Henry Brutcher, Altadena, Calif. (Partial translation No. 1930.)

Method described is based on precipitation of calcium oxalate. Procedures with and without centrifuging are described.

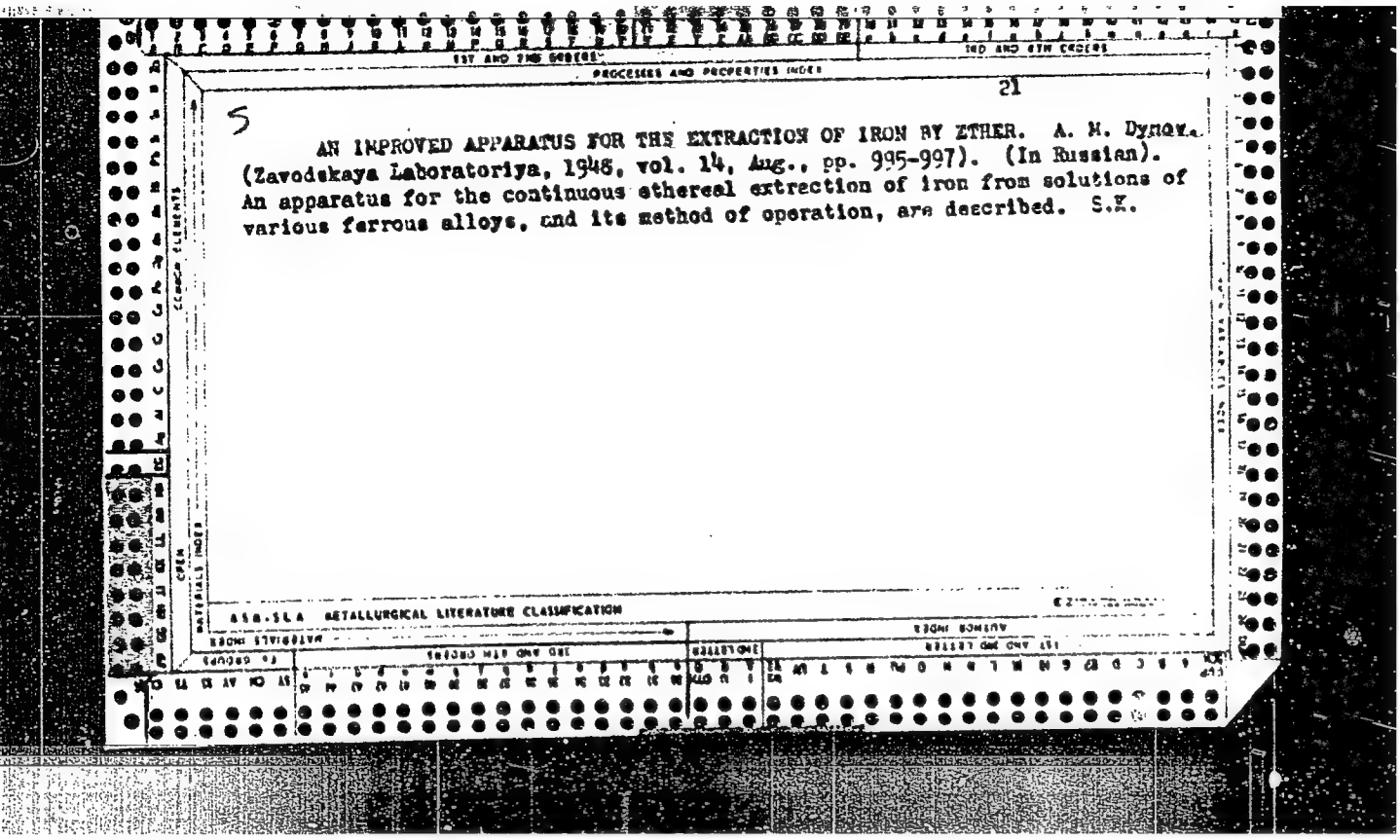


Photocolorimetric methods for the analysis of iron alloys. III. Determination of cobalt in steel. A. M. Dymov and O. A. Volnina (Stalin Steel Inst., Moscow). *Zavodskaya Lab.* **13**, 137–40 (1947); cf. C. A. **41**, 1171*i*. For the photoelec. colorimetric detn. of Co by a method similar to that of R. G. Jones (C.A. **43**, 15) the reagent is 0.1 g. α-nitroso-β-naphthol plus 10 ml. of 5% KOH or NaOH per l. For steels contg. (*a*) less than 1% of Co, and (*b*) between 1 and 5% of Co, dissolve 0.1 g. sample, and dil. to 100 or 200 ml., resp. For (*a*) use 10 ml. of soln., for (*b*) 5 ml.; add 10 or 5 ml., resp., of 20% Rochelle salt soln. to prevent pptn. of Fe, then 10 or 5 ml., resp., of 5% KOH soln., and, in either case, make up to 100 ml. Max. intensity of color is produced by 15–20 ml. of reagent per 100 ml. of soln. independently of the quantity of Co present. Sensitivity is increased by using a blue light filter. Cr up to 14%, W up to 17.7%, and Ni up to 1% do not interfere; greater quantities than 1% of Ni intensify the color. Construct 2 calibration curves: one for Co < 1%, one for Co 1–5%. Use red or galvanometer deflections. Up to 5% of Co, the values found do not deviate more than 0.2% from results obtained by the Hudsky-Knorre gravimetric method. E. H.



S

Prerequisites for the Accurate Determination of Hydrogen [in Metals]. A. M. Dymov. (Zavodskaya Laboratoriya, 1947, vol. 13, pp. 292–295 : Chemical Abstracts, 1948, vol. 42, May 20, col. 3283). In establishing a satisfactory method for determining hydrogen in metals, it is necessary to consider : (*a*) Progress of smelting before the sample is taken, (*b*) dimensions and form of the mould which will result in most uniform cooling for the given grade of steel ingot, (*c*) sections of the ingot to be sampled, (*d*) form and dimensions of the sample, and (*e*) preparation of the sample for analysis. A comparative study should be made of the best methods of determining hydrogen for various groups of steels and not for steels in general. Consideration should be given to the physicochemical properties of the steels as they affect the gas to be determined.



21

S

AN IMPROVED APPARATUS FOR THE EXTRACTION OF IRON BY ETHER. A. M. Dymov. (Zavodskaya Laboratoriya, 1948, vol. 14, Aug., pp. 995-997). (In Russian). An apparatus for the continuous ethereal extraction of iron from solutions of various ferrous alloys, and its method of operation, are described. S.K.

DYMOV, Prof. Dr. A. M. PA 3/49T8

USSR/Chemistry - Laboratories, Analytical Aug 48
Chemistry - Analysis

"Progressive Standards - Fundamental Indication of the Work of a Laboratory," Prof Dr A. M. Dymov, Lab of Tech Anal, Moscow Steel Inst Imeni I. V. Stalin, 3½ pp

"Zavod Lab" Vol XIV, No 8

Reviews progress made in analysis during past 10 years. Urges more widespread use of photoelectric and polarographic methods. Only by trained men with correct equipment can average progressive norms be attained.

3/49T8

PA 16/49T17

DYMOV, A. M.

USSR/Chemistry - Concentration (the Condition) Sep 48

Chemistry - Reagents, in Fixanals

"Necessity for Increasing the Use of Fixanals," A. M. Dymov, ½ p

"Zavod Lab" Vol XIV, No 9

"Fixanals" are glass ampoules containing a known proportion of the equivalent weight of a reagent. They facilitate preparation of titration solutions, etc. However, normal solutions are rarely used in factory laboratories, empirical concentration solutions being used instead. Suggests production of special empirical concentration fixanals.

16/49T17

DYMOV, A. M.

PA 16/49T16

USSR/Chemistry - Analysis, Laboratories for Sep 48
Chemistry - Condensers

"A New Air Condenser," A. M. Dymov, Steel Inst imeni I. V. Stalin, ½ p

"Zavod Lab" Vol XIV, No 9

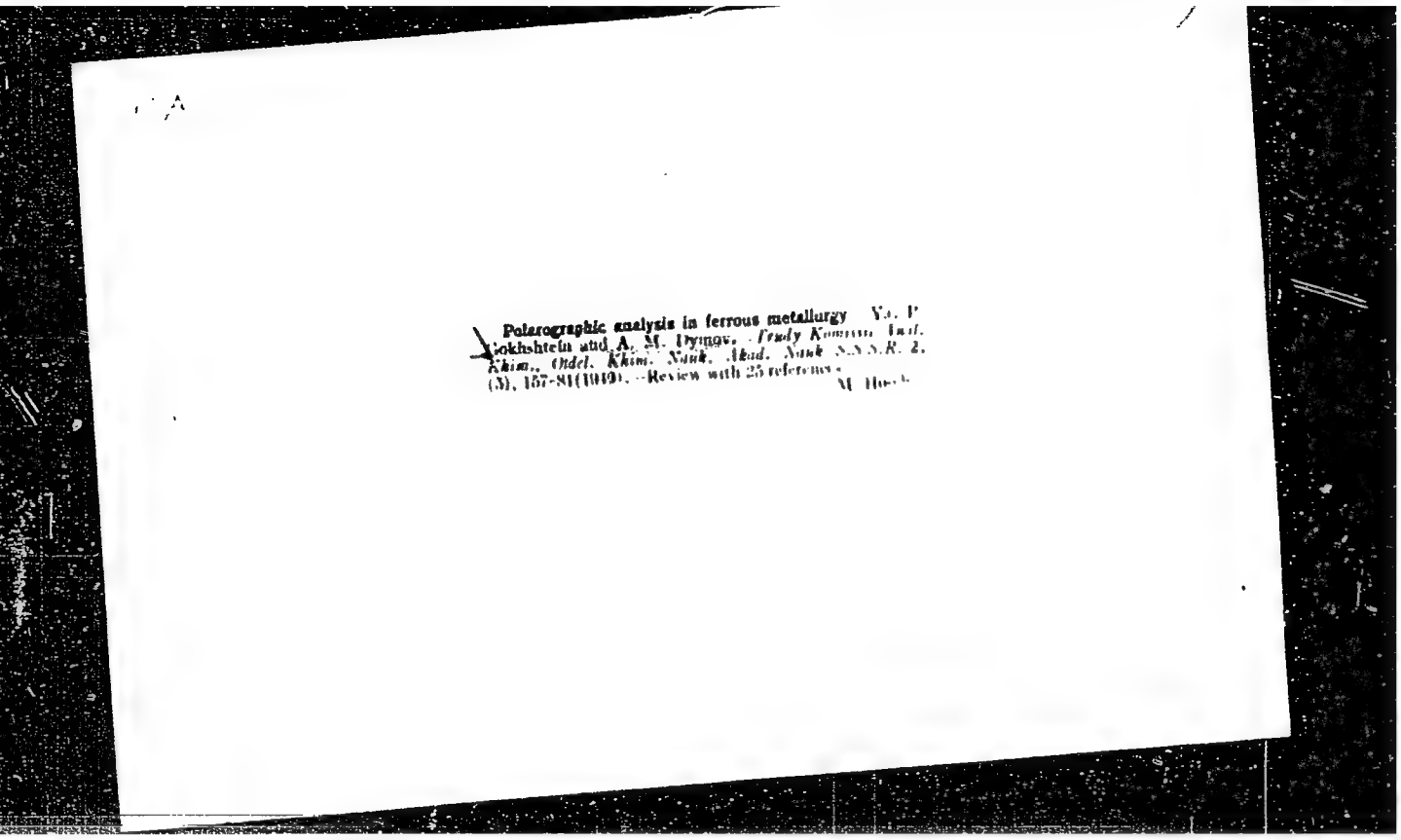
Certain analyses and syntheses involve use of air condenser, usually consisting of glass tube 4 - 6 mm in diameter and 75 - 100 cm long. Describes improved version, giving sketch. It consists essentially of glass tube 45 cm long with four spherical dilations 30 mm in diameter.

16/49T16

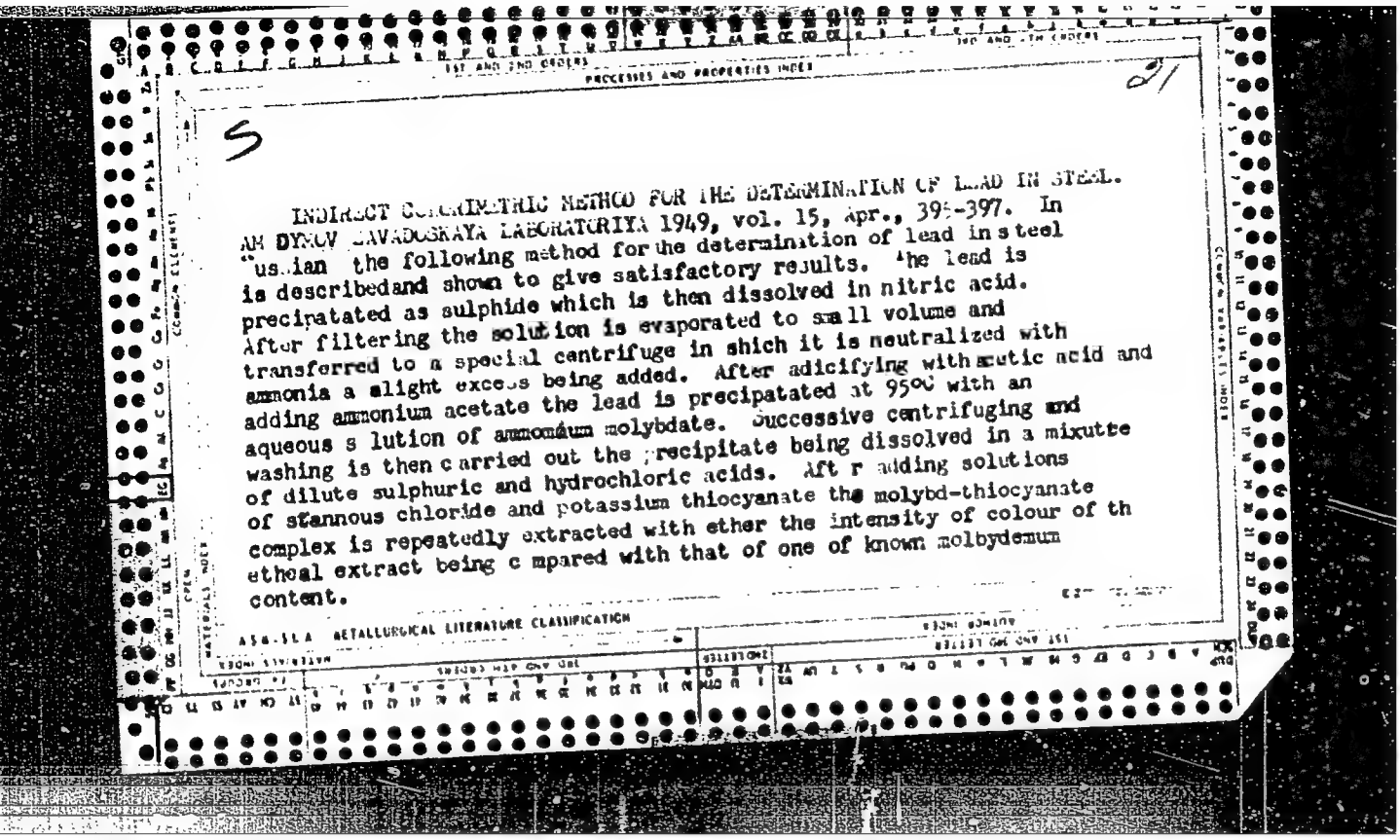
DYMOV, A. M.

MIC.
Misc.
.1131A

Tekhnicheskiy analiz rud i metallov (Technical analysis of ores and metals)
Moskva, Mashgiz, 1949.
483 p. illus.



Polarographic analysis in ferrous metallurgy. Ya. P. Gokhshtein and A. M. Dymov. *Trudy Komissii Inst. Khim., Otdel. Khim. Nauk, Akad. Nauk S.S.S.R.* 2, (3), 157-81(1949).—Review with 25 references.



S

INDIRECT COLORIMETRIC METHOD FOR THE DETERMINATION OF LEAD IN STEEL. AM DYNOV ZAVADSKAYA LABORATORIYA 1949, vol. 15, Apr., 395-397. In "us..ian the following method for the determination of lead in steel is describedand shown to give satisfactory results. The lead is precipatated as sulphide which is then dissolved in nitric acid. After filtering the solution is evaporated to small volume and transferred to a special centrifuge in shich it is neutralized with ammonia a slight excess being added. After adicifying with acetic acid and adding ammonium acetate the lead is precipatated at 95°C with an aqueous solution of ammonium molybdate. Successive centrifuging and washing is then carried out the precipitate being dissolved in a mixutte of dilute sulphuric and hydrochloric acids. After adding solutions of stannous chloride and potassium thiocyanate the molybd-thiocyanate complex is repeatedly extracted with ether the intensity of colour of th ethoal extract being compared with that of one of known molbydemum content.

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION

PA 163T50

DYMOV, A. M.

USSR/Metals - Austenite Jun 50
Chemistry - Analysis

"Method for Chemical Separation of Iron Niobide From Austenitic Steel," A. M. Dymov, S. S. Gorelik, Moscow Inst of Steel imeni I. V. Stalin

"Zavod Lab" Vol XVI, No 6, pp 648-650

Suggests method developed using chrome-nickel-molybdenum austenitic steel with niobium content 16-20 times greater than carbon content. Such steels, according to technical literature, consist of two phases: austenite and niobium carbide. Establishes by thermal coloring etching the

163T50

USSR/Metals - Austenite Jun 50
(Contd)

presence of third phase. Describes procedure for identification of unknown phase as iron niobide and method for its separation. Method may be used only for qualitative determination.

163T50

BUYANOV, N.V., kandidat tekhnicheskikh nauk, redaktor; GENEROZOV, B.A., redaktor; DYMOV, A.M., professor, doktor, retsenzent; TROITSKAYA, M.I., kandidat tekhnicheskikh nauk, retsenzent; STARODUBTSEVA, S.N. redaktor.

[Modern methods of analysis in metallurgy] Sovremennye metody analiza v metallurgii, Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1955 222 p. (MLRA 9:1)
(Metallurgical analysis)

DYMOV, A. M. (Prof.)(Dr. Chem. Sci.); MOLCHANOVA, R. S.

"The Determination of Phosphorus in Ferrotitanium," in book The Application of Radioisotopes in Metallurgy, Symposium XXXIV; Moscow; State Publishing House for Literature on Ferrous and Nonferrous Metallurgy, 1955.

Prof. A. M. DYMOV, Dr. Chem. Sci.; R. S. Molchanova, Assistant/ Chair of Analytical Chemistry, Moscow Inst. of Steel im I. V. Stalin.

DYMOV, A. M. (Prof.) (Dr. Chem. Sci.); MOLCHANOVA, R. S.;

"The Determination of Phosphorus in Ferroniobium," in book The Application of Radioisotopes in Metalllurgy, Symposium XXXIV; Moscow; State Publishing House for Literature on Ferrous and Nonferrous Metallurgy, 1955.

Prof. A. M. Dymov, Dr. Chem. Sci.; R. S. Molchanova, Assistant, Chair of Analytical Chemistry, Moscow Inst. of Steel im I. V. Stalin.

DYMOV, A.M., professor, doktor khimicheskikh nauk; MOLCHANOVA, R.S., assistant.

Determining phosphorus in ferroniobium. Sbor.Inst. stali 34:306-319 '55. (MLRA 9:7)

1.Kafedra analiticheskoy khimii.
(Phosphorus--Isotopes) (Iron-niobium alloys)

27

3287. The determination of phosphorus in ferro-titanium. A. M. Dymov and R. S. Molchanova. *Primen. Radioakt. Izotop. v Metallurg.*, M.: *Metallurgizdat*, 1955, (34), 330-340. Ref. Zhur. Khim. 1956 [illegible] titanium may be [illegible] Na_2O_2 followed by [illegible] water or [illegible] HCl and HNO_3 [illegible] the finely divided ferrotitanium in 16 ml of HNO_3 (1:1) and 20 ml of conc. HCl on a sand bath. After the black specks have disappeared [illegible] tion is completed volumetrically with [illegible]

4E2c

4E4j

1. [illegible] analiticheskoy Khimi

BABKO, Anatoliy Kirillovich; PYATNITSKIY, Igor' Vladimirovich; ALIMARIN, I.P., redaktor; DYMOV, A.M., professor, redaktor; LUR'YE, Yu.Yu., professor, redaktor; FILIPPOVA, N.A., redaktor; LUR'YE, M.S., tekhnicheskiy redaktor

[Quantitative analysis] Kolichestvennyi analiz. Moskva, Gos. nauchno-tekhn. izd-vo khim. lit-ry, 1956. 736 p. (MLRA 9:11)

1. Chlen-korrespondent AN SSSR (for Alimarin)
(Chemistry, Analytical--Quantitative)

DYMOV, A.M.

137-58-5-11136

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 319 (USSR)

AUTHORS: Dymov, A.M., Shchelkunova, A.N.

TITLE: The Employment of the Colorimetric Method in the Analysis of Iron Alloys (Kolorimetricheskiy metod v primenenii k analizu zheleznykh splavov)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii Ukr. resp. pravl., 1956, Vol 4, pp 32-37. Comments, p 38

ABSTRACT: The method, developed for the determination of small amounts of Mg in cast iron, is based on the formation of Mg hydroxyquinolate followed by colorimetric analysis. A weighed portion of cast iron is dissolved in 50 cc of HCl (1:1). After oxidizing the solution with 2-3 cc of HNO_3 (specific gravity of 1.4) and evaporating it to dryness, HCl is added, and the resulting solution is boiled. After filtering out the precipitate, the filtrate is evaporated to dryness and the dry residue is treated with HCl. the basic amount of Fe is extracted with the aid of amylacetate. In order to remove the Fe entirely, 10 cc of 3% H_2O_2 are added together with an excess of a 25% solution of NH_4OH; the solution is heated for 15-20 minutes in a bath and is then filtered out. The

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137-58-5-11136

The Employment of the Colorimetric Method in the Analysis of Iron Alloys

combined filtrates are evaporated to dryness and heated in order to remove the ammonium salts. After treating the dry residue with H_2O, to which 3 - 5 drops of 2-N H_2SO_4 have been added, the MnO_2 which has separated out is filtered off. The Mg in the filtrate is precipitated by the action of a 2% alcohol solution of hydroxyquinoline in the presence of NaOH and sodium tartrate. The residue is dissolved in 0.1-N CH_3COOH and is analyzed colorimetrically. Another approach is also recommended: the solution, freed of Fe and other elements, is diluted to 100 cc; bromthymol blue is added and the solution is neutralized with a 2-N NH_4OH solution; Mg and Fe are then precipitated with the aid of a 2% alcohol solution of hydroxyquinoline. The Mg hydroxyquinolate of the filtrate is precipitated in an alkaline medium in the presence of tartrate. The precipitate is dissolved in 0.1-N solution of CH_3COOH and the Mg is analyzed colorimetrically. The relative error amounts to 1.5-3.5%. See also RzhMet, 1957, Nr 7, abstract 13656.

1. Iron alloys--Analysis 2. Colorimetry--Applications

Yu. B.

Card 2/2

DYMOV, A.M., professor, doktor khimicheskikh nauk; SHCHEIKUNOVA, A.N., assistant.

Colorimetric method for the analysis of iron alloys. Sbor. Inst. stali no.35:417-432 '56. (MLRA 10:8)

1. Kafedra analiticheskoy khimii.
(Iron alloys--Analysis) (Colorimetry)

DYMOV, A.M.

AUTHORS: Dymov, A. M., Yel'yanov, A. A., Klyachko, Yu. A., Lur'ye, Yu. Yu., Troitskaya, M. V., and Chernikhov, Yu. A.

TITLE: Solomon Yul'yevich Faynberg (Solomon Yul'yevich Faynberg)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, No. 1, p. 128

ABSTRACT: On the occasion of the 80th birthday of the scientist, Faynberg, the above authors recount some of his achievements. Since 1951 he has been the head of the GINTSVETMET (State Institute of Non-ferrous Metals), and wrote the book, "Analysis of the Ores of Non-ferrous Metals."

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE:

Card 1/1

AUTHOR: Dymov, A. M., Professor, Doctor of Chemical Sciences 32-10-8/32

TITLE: Comments

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol 23, Nr 10, pp 1175-1175 (USSR)

ABSTRACT: In his report on the occasion of the 40th anniversary of the October revolution, the author declares to be in a position to state a tremendous progress in analytical chemistry in the USSR in recent times. This concerns especially the fields of organic reagents many of which were proposed for the first time by Soviet analysts, complex compounds, analysis by volume, extraction processes of the separation and concentration of elements and their compounds. The adsorption-chromatographical method of the Russian botanist M. S. Tsvettov, was extensively developed in this connection; completed by the ion-exchange process, this method became very much in demand both by analysts and technologists whom it enables to carry out the most accurate processes of analysis of separation, purification, etc. Especial importance should be attached to the application of radioactive isotopes which lead to the solution of many important question in analytic chemistry and in detail for the elaboration of highly sensitive methods of analysis in the research of the solubility of the deposit, co-precipitation processes, separation processes, among

Card 1/2

Comments

which ranges extraction and chromatography. Good results were obtained among others also with the treatment of micro samples by the application of isotopes.
According to the statements of the author, important progress was achieved in the field of laboratory technics in the USSR, especially in the construction of new outfits for micro-and ultra-micro-analysis, manipulators for test works at range which is of great importance with the use of radioactive substances, etc. - The great progress in the field of technical analysis lead to the equalization of this field with the field of the so-called classical analysis by carrying out the most accurate determinations and test processes within the scope of daily inspection work in the plants, or works-laboratories respectively, as e.g. the determination of micro-component in pure metals up to ten thousandts parts of a %.

ASSOCIATION: Moscow Steel Institute imeni I. V. Stalin (Moskovskiy institut stali imeni I. V. Stalina)

AVAILABLE: Library of Congress

Card 2/2

1. Chemistry-USSR-Progress

DYMOV, A.M.

AUTHOR: Dymov, A.M., Professor, Head Soviet Delegation of Analysts at the 1st and 2nd Conferences of ISO 32-12-68/71

TITLE: Study and Approval of International Standards of Analysis Methods (O razrabotke i utverzhdenii mezhdunarodnykh standartov na metody analiza).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1523-1524 (USSR)

ABSTRACT: The author gives a report on the attendance of the Soviet delegation at meetings of the International Organization for Standards (ISO). As the USSR possesses the largest manganese occurrences of the world, it was requested by the said organization to work out the project for the methods of determining the components of manganese ores. In the course of two sessions of this organization, which took place at Leningrad in November 1954 and August 1956, the Soviet delegation, under the leadership of the author, submitted a total of 14 of such projects, which were accepted and passed by the meeting with some improvements and additions. During the second of these sessions the Soviet delegation received the offer to work out further 8 projects of methods. The order has already been executed and the elaborated projects have been sent to the member countries after being translated into the French and English languages. It is intended that

Card 1/2

Standards of Analysis Methods **Study and Approval** of International 32-12-68/71

these projects will be dealt with at the next session of this organization, which will take place within short at Moscow. The projects contain mainly the latest accelerated methods of determination in the case of manganese ores under transport conditions, viz. with respect to manganese dioxide (with titration), phosphorus (with application of "blue salt" or colorimetrically), as well as according to photocolorimetric analysis of the content of: nickel, cobalt, lead and zinc, copper, arsenic, vanadium, and metallic iron. The members of the Soviet delegation suggested that, in the case of manganese transports, average quality analyses be introduced. In conclusion the author expresses his appreciation of the "friendly and objective" reception accorded by his foreign colleagues to the members of the Soviet delegation during the above mentioned conferences of the ISO organization.

AVAILABLE: Library of Congress

Card 2/2 1. Manganes ores-Standards

DYMOV, A.M.

SVECHNIKOV, V.M., akademik; STARODUBOV, K.F., akademik; DYMOV, A.M., prof.; YEL'YANOV, A.A.; CHERNIKHOV, Yu.A., prof.; SHCHAPOV, N.P., prof.; BLAITTER, M.Ye., prof.

Lev Samuilovich Dlugach; obituary. Zav. lab. 23 no.12:1527-1528 '57. (MIRA 11:2)

1. AN USSR (for Svechnikov, Starodubov).
(Dlugach, Lev Samuilovich, 1887-1957)

AUTHORS: Dymov, A. M., Koreneva, V. V. SOV/163-58-3-46/49

TITLE: The Extraction of Iron (III) From Hydrochloric Solutions With Tribenzylamine in Chloroform (Ekstraktsiya zheleza (III) iz solyanokislykh rastvorov tribenzilaminom v khloroforme)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 3, pp 269-272 (USSR)

ABSTRACT: The optimum conditions for this extraction were investigated. The extent of the extraction of iron (III) from hydrochloric solutions as dependent on the concentration of the hydrochloric acid and the concentration of the tribenzylamine in chloroform, the concentration of the iron in the initial solution, the duration of the extraction, the number of subsequent extractions, and the ratio between the organic and the aqueous phase were investigated. An 8% tribenzylamine solution was used as extracting agent. The results obtained show that the extraction of iron (III) from hydrochloric solutions depends to a high degree on the concentration of the hydrochloric acid in the solution. The complete extraction was obtained with 8n HCl. A further increase of the concentration of hydrochloric acid did not result

Card 1/2

The Extraction of Iron (III) From Hydrochloric Solutions With Tribenzylamine in Chloroform

in a percentual increase of the extraction.
The extraction of iron from concentrated hydrochloric acid is explained by the occurrence of some complex groups:
$\left[FeCl^{2+}\right]$; $\left[FeCl_2\right]^+$; $FeCl_3$; $\left[FeCl_4\right]^-$ and others.
A complete extraction from an 8n HCl-solution is obtained by means of an 8% chloroform solution of tribenzylamine.
A complete extraction is obtained at a content of 2,02 mg/ml - 40,40 mg/ml Fe. Larger quantities of iron are not completely extracted.
The equilibrium between the aqueous and the organic phase is obtained within 2-3 minutes. If the ratio between organic phase and aqueous phase is 1:1 the iron is completely extracted.
There are 3 figures, 2 tables, and 7 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: December 6, 1957

DYMOV, A.M., prof., doktor khim.nauk

Scientific and technical examination of the quality of industrial materials. Standartizatsiia 22 no.5:23-24 S-O '58. (MIRA 11:11)

1. Moskovskiy institut stali imeni I.V. Stalina.
(Quality control)

DYMOV, A.M., prof.; LUR'YE, Yu.Yu.; ALIMARIN, I.P.; FEYGEL', L.V.

Vladimir Nikolaevich Alekseev; obituary. Zav.lab. 24 no.4:512 '58. (MIRA 11:4)

1. Chlen-korrespondent AN SSSR (for Alimarin). 2. Sotrudniki kafedry analiticheskoy khimii Moskovskogo instituta stali.
(Alekseev, Vladimir Nikolaevich 1888-1958)

5(0)

AUTHORS: Vinogradov, A. P., Alimarin, I. P., Tananayev, I. V., Dymov, A. M., Terent'yev, A. P., Lur'ye, Yu. Yu., Chernikhov, Yu. A., Korenman, I. M., Kuznetsov, V. I., Gel'man, N. E., Klimova, V. A., Sheveleva, M. S., Chumachenko, M. N., Terent'yeva, Ye. A. and others SOV/32-25-2-78/78

TITLE: Mirra Osipovna Korshun (Mirra Osipovna Korshun)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 2, p 255 (USSR)

ABSTRACT: Mirra Osipovna Korshun, one of the leading scientists in the field of the microanalysis of organic compounds, died on December 1, 1958. The deceased graduated in 1929 from the II MGU where she had studied chemistry. In 1933 she became head of the analytical group. From 1935 onward she was Head of the Laboratory for Microanalyses at the Institut organicheskoy khimii (Institute of Organic Chemistry) and, in recent years at the Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elemental-Organic Compounds, AS USSR). Moreover, she was a Member of the Komissiya po analiticheskoy khimii pri Prezidiume AN SSSR (Commission for Analytical Chemistry

Card 1/2

With the Presidium of the AS USSR). In 1958 she was appointed Member of the Komitet po mikrokhimicheskim metodam Mezhdunarodnogo soyuza po chistoy i prikladnoy khimii (Committee on Micro-Chemical Methods of the International Association for Pure and Applied Chemistry). M. O. Korshun introduced into organic analysis the principle of "pyrolytic combustion" in the empty tube which makes it possible to determine simultaneously several elements contained in one weighed portion of complicated organic compounds. The school of organic microanalysis founded by the deceased is still being further developed in the USSR in the spirit of her work.

USCOMM-DC-60750

Dymov, A.M.

PHASE I BOOK EXPLOITATION 3GV/4782

Moscow. Institut stali

Proizvodstvo i obrabotka stali i splavov (Production and Treatment of Steel and Alloys) Moscow, Metallurgizdat, 1960. 462 p. (Series: Its: Sbornik, 39) 2,100 copies printed.

Ed.: Ye. A. Borkol; Ed. of Publishing House: S. L. Zinger; Tech. Ed.: K. R. Klyuman; Editorial Council of the Institute: M. A. Glinkov, Professor, Doctor of Technical Sciences; N. N. Grigorash, Docent, Candidate of Technical Sciences; V. F. Yelyutin, Professor, Doctor of Technical Sciences; A. A. Zhukhovitskiy, Professor, Doctor of Chemical Sciences; I. M. Kidin, Professor, Doctor of Technical Sciences; B. G. Livshits, Professor, Doctor of Technical Sciences; A. P. Lyublinov, Professor, Doctor of Technical Sciences; I. M. Pavlov, Corresponding Member, Academy of Sciences USSR; and A. M. Pokhvisnev, Professor, Doctor of Technical Sciences.

PURPOSE: This book is intended for technical personnel in industry, scientific institutions and schools of higher education; dealing with open-hearth and electric-furnace steelmaking, metal rolling, physical metallurgy, and heat-treatment. It may

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Also be used by students specializing in these fields.

COVERAGE: The book contains results of theoretical and experimental investigations of metallurgical and heat-engineering processes in open-hearth and electric furnaces. Data are included on the following: desulfurizing of pig iron outside the blast furnace, interaction of oxides of the carbide-forming metals with solid carbon, the change of content of gases in the bath of the open-hearth furnace in various periods of melting, intensification of the electric melting of steel, etc. Other articles deal with the nonuniformity of deformation in rolling, the study of the continuous rolling process, the dependence of the friction — slippage coefficients in rolling on a number of factors, and other problems in the preworking of metals. Articles on physical metallurgy and the theoretical principles and techniques of the heat treatment of steel are also included. No personalities are mentioned. References accompany most of the articles. There are 207 references, both Soviet and non-Soviet.

Card 2/10

Dymov, A. M., Doctor of Chemical Sciences, and M. Z. Rozel', Candidate of Chemical Sciences [Department of Analytical

Card 9/10

DYMOV, A.M., prof., doktor khim. nauk

[Technical analysis of rocks, slags, and metals checking the chemical compsotion of materials used in mallurgy); laboratory manual] Tekhnicheskii analiz rud, shlakov i metallov (kontrol' khimicheskogo sostava materialov metallurgicheskogo proizvodstva); laboratornoe rukovodstvo. Moskva, Mosk. in-t stali im. I.V.Stalina. No.1. [Analysis of iron and manganese ores; determination of the general iron and manganese contents] Analiz zheleznykh i margantsevykh rud; opredelenie obshchego soderzhaniia zheleza i margantsa. 1960. 44 p. (MIRA 14:10)
(Iron ores--Analysis) (Manganese ores--Analysis)

S/148/61/000/011/016/018
E021/E435

AUTHORS: Dymov, A.M., Kozel', L.Z.

TITLE: The determination of small quantities of aluminium in metallic titanium

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.11, 1961, 182-184

TEXT: Three methods of determining aluminium (0.002 to 0.1%) in titanium were tried. In the first method, the titanium was separated from the aluminium by precipitation with sodium hydroxide and the aluminium was finally determined colorimetrically. Experiments showed that the results gave considerably higher results than the quantities added. The second method consisted of separating the titanium from the aluminium by precipitating the titanium with cupferron and the extraction of titanium cupferronate by chloroform. The final determination was again carried out colorimetrically; the results were also somewhat higher than the aluminium added. Further experiments showed that boiling with hydrochloric acid enabled complete decomposition of the cupferron and a colourless solution could be obtained. The results obtained

were much better. The third method, used for determining Al contents of 0.05 to 0.4%, consisted of separating the titanium from the aluminium by cupferron with filtration of the titanium cupferronate precipitate without any extraction process. This method also gave good results when the cupferron was decomposed by boiling with hydrochloric acid. There are 4 tables and 6 non-Soviet-bloc references: the four most recent references to English language publications read as follows:
Ref.1: J.A.Corbet. Metallurgia, 49, 1954, 206;
Ref.3: Republic Steel Corp., Massilon. Ohio, 1954, 56-9;
Ref.4: M.Codell and Norwitz. Anal. Chem. 25 (1953) 1437;
Ref.6: J.J.Mikula and M.Codell. Anal. Chem., 27, 1955, 729.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: November 14, 1960

YAKOVLEV, Pavel Yakovlevich, kand. khim. nauk; FEDOROV, Aleksey Alekseyevich, inzh.; BUYANOV, Nikolay Vasil'yevich, kand. tekhn. nauk; DYMOV, A.M., dokt. khim. nauk, prof., retsenzent; SHEMYAKIN, F.M., dokt., khim. nauk, prof., retsenzenzent; KHARLAMOV, I.P., kand. tekhn. nauk, retsenzent; VENETSKIY, S.I., red. izd-va; KLEYNMAN, M.R., tekhn. red.

[Analysis of data on metallurgical production; determination of microimpurities] Analiz materialov metallurgicheskogo proizvodstva; opredelenie mikroprimesei. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 316 p. (MIRA 14:7)
(Metals—Analysis)

ALIMARIN, I.P.; BILIMOVICH, G.N.; BUSEV, A.I.; VAYNSHTEYN, E.Ye.; VOLYNETS, M.P.; GORYUSHINA, V.G.; DYMOV, A.M.; YELINSON, S.V.; ZVYAGINTSEV, O.Ye.; KOLOSOVA, G.M.; KORCHEMNAYA, Ye.K.; LEBEDEV, V.I.; MALOFEYEVA, G.A.; MELENT'YEV, B.N.; NAZARENKO, V.A.; NAZARENKO, I.I.; PETROVA, T.V.; POLUEKTOV, N.S.; PONOMAREV, A.I.; RYABUKHIN, V.A.; STROGANOVA, N.S.; CHERNIKHOV, Yu.A.; VINOGRADOV, A.P., akademik, otv. red.; RYABCHIKOV, D.I., doktor khim. nauk, prof., otv. red.; GUS'KOVA, O., tekhn. red.

[Methods for the determination and analysis of rare elements] Metody opredeleniia i analiza redkikh elementov. Moskva, 1961. 667 p. (MIRA 14:7)

1. Akademiya nauk SSSR. Institut geokhimii i analiticheskoy khimii.
(Metals, Rare and minor)

DYMOV, A.M.

"Analytical chemistry of thorium" by D.I. Riabchikov, E.K. Gol'braikh. Reviewed by A.M. Dymov. Zhur. anal. khim. 16 no. 4:510-511 Jl-Ag '61. (MIRA 14:7)
(Thorium--Analysis) (Riabchikov, D.I.) (Gol'braikh, E.K.)

DYMOV, A.M.; KOZEL', L.Z.

Determination of small amounts of aluminum in titanium metal.
Izv. vys. ucheb. zav.; chern. met. 4 no.11:182-184 '61. (MIRA 14:12)

1. Moskovskiy institut stali.
(Aluminum--Analysis)
(Titanium--Analysis)

DYMOV, A.M., prof.

Conference of the Technical Committee on the methods of analysis and assaying of manganese ores. Zav.lab. 28 no.6:764-765 '62. (MIRA 15:5)
(Manganese ores--Sampling and estimation)

DYMOV, A.M.

New scale and table of atomic weights. Zav. lab. 29 no.10: 1275-1276 '63. (MIRA 16:12)

1. Moskovskiy institut stali i splavov.

STEPIN, Vasiliy Vasil'yevich; SILAYEVA, Yelizaveta Vasil'yevna; PLISS, Anastasiya Mikhaylovna; KURBATOVA, Vera Ivanovna; KRYUCHKOVA, Lidiya Merkur'yevna; PONOSOV, Vladimir Il'ich; DYMOV, A.M., doktor khim. nauk, prof., red.; FEDOROV, A.A., st. nauchn. sotr., red.; TKACHENKO, N.S., inzh., red.; DOBRZHANSKIY, A.V., st. inzh., red.; LEVIT, Ye.I., red.izd-va; ISLENT'YEVA, P.G., tekhn. red.

[Analysis of ferrous metals, alloys and manganese ores] Analiz chernykh metallov, splavov i margantsevykh rud. [By] V.V. Stepin i dr. Moskva, Metallurgizdat, 1964. 498 p. (MIRA 17:3)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (for Dymov, Fedorov, Tkachenko, Dobrzhanskiy).

DYMOV, Aleksandr Maksimovich

[Technical analysis (control of the chemical composition of iron alloys); methods for determining the element content] Tekhnicheskii analiz (kontrol' khimicheskogo sostava zheleznykh splavov); metody opredeleniia soderzhaniia elementov. Moskva, Metallurgiia, 1964. 335p. (MIRA 17:12)

1. Moskovskiy institut stali i splavov, kafedra Analiticheskoy khimii.

DYMOV, A.M., prof.

Modern quipment for chemical laboratories. Zav. lab. 30 no.7: 897 '64. (MIRA 18:3)

1. Moskovskiy institut stali i splavov.

GROMAKOVA, Z.I.; BUKETOVA, Ye.A.; MAKHMETOV, M.Zh.; DYMOV, A.M.

Determination of tellurium forms in copper electrolytic slimes.
Zhur. anal. khim. 20 no.12:1364-1367 '65. (MIRA 18:12)

1. Khimiko-metallurgicheskiy institut AN KazSSR, Karaganda.
Submitted October 27, 1964.

L 24428-66 EWT(m)/EWP(t)/EWP(k) IJP(c) JD/JH
ACC NR: AT6006482 SOURCE CODE: UR/2680/65/000/024/0284/0297

AUTHORS: Goderzian, K. K.; Dymov, V. N. 37 B+1

ORG: State Scientific Research and Design Institute of Alloys and Nonferrous Metalworking, Moscow (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut splavov i obrabotki tsvetnykh metallov)

TITLE: Basic technological parameters in the manufacture of high purity aluminum wire 17 18 27

SOURCE: Moscow. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut splavov i obrabotki tsvetnykh metallov. Trudy, no. 24, 1965. Metallovedeniye i obrabotka tsvetnykh metallov i splavov (Metal science and the treatment of nonferrous metals and alloys), 284-297

TOPIC TAGS: aluminum, lubricant, metal test, metallurgic process, wire, fine wire, wire product/ Alyudro 6 lubricant

ABSTRACT: This investigation was conducted to determine the basic conditions for the manufacture of high purity aluminum wire used in construction of silicon diodes. The effect of different drawing speeds, temperature, drawing dyes, and drawing

Card 1/3

lubricants on the purity and strength properties of ultra-pure aluminum wire was determined. The initial purity of the metal was in the region of 99.996 to 99.99987%. Microphotographs of wire specimens are presented. The experimental results are shown in graphs and tables (see Fig. 1).

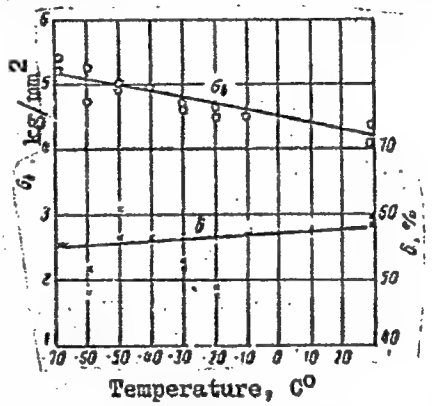

Fig. 1. Influence of low temperatures on the mechanical properties of zone-refined aluminum. σ_b strength limit, δ plasticity coefficient.

It was found that wire of 0.1 to 0.08 mm in diameter may be obtained from 99.9992% pure aluminum without any difficulty. But obtaining wire of higher purity required

L 24428-66

ACC NR: AT6006482

low drawing temperatures (-60 to -70C) and drawing speeds on the order of 30--40 m/sec in order to prevent recrystallization of the metal. The plasticity of the wire was found to increase and its strength to decrease with increase in the purity of the aluminum. The use of diamond dyes and appropriate dye lubricants (the lubricant "Alyudro 6, specimen 1" was found to be the most suitable of the ten lubricants tested) insures the retention of the initial high purity of the metal in the wire. Orig. art. has: 1 table and 6 graphs.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 009

Card 3/3 dda

L 02357-67 EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/JH

ACC NR: AR6028432 SOURCE CODE: UR/0137/66/000/005/D060/D060

AUTHOR: Goderzian, K. K.; Dymov, V. N.

TITLE: Basic parameters of wire protection from high-purity aluminum

SOURCE: Ref. zh. Metallurgiya, Abs. 5D412

REF SOURCE: Tr. Gos. n.-i. i proyektn. in-ta splavov i obrabotki tsvetn. met., vyp. 24, 1965, 284-297

TOPIC TAGS: wire, fine wire, wire protection, wire drawing

ABSTRACT: Wire 0.1 to 0.08-mm in diameter can be drawn from aluminum (99.9992%) by single-stage or multistage machines. However, for drawing wire (< 1.2 mm in diameter) from high-purity aluminum special conditions are necessary. Drawing must be done at -60C to 70C at speeds which eliminate the possibility of recrystallization (30 to 40 m/sec). The lowering of temperature of metal to -60C to 70C increases tensile strength of aluminum by 20 to 25%, with practically no changes in length. Based on stability conditions of the drawing process and the safety factors at room temperature, 18—25% reductions in one pass are recommended. It was determined that the technology of wire production

Card 1/2

UDC: 669.621.771.42:669.41

L 02357-67

ACC NR: AR6028432

by rolling with subsequent drawing through diamond draw plates preserves the initial aluminum purity. Lubricants for drawing high-purity aluminum are suggested. Orig. art. has: 6 figures and 1 table. The bibliography has 11 references. L. Kachenova. [Translation of abstract].

SUB CODE: 13/

Card 2/2

DYMOV, A.V.; KORENEVA, V.V.

Indirect photometric method of determining small amounts of aluminum in iron alloys. Izv.vys. ucheb. zav.; chern. met. no.3:192-196 '61. (MIRA 14:3)

1. Moskovskiy institut stali.
(Iron alloys--Analysis)
(Photometry)

SOV/133-59-6-13/41

AUTHORS: Kornfel'd, V.N., Candidate of Technical Sciences, Voytov, A.O., Koshelev, V.I., Shorin, A.F. and Dymov, B.K., Engineers

TITLE: Thermal Performance of an Open Hearth Furnace when Blowing Oxygen or Oxygen Water Mixture into the Bath (Teplovaya rabota martenovskoy pechi pri produvke metalla)

PERIODICAL: Stal', 1959, Nr 6, pp 513-520 (USSR)

ABSTRACT: Thirty eight experimental heats with blowing oxygen into the metal bath were carried out on a 200 ton open hearth furnace operating with 70% of hot iron. The moment of the beginning of blowing was varied. In order to decrease the formation of fumes during blowing in some heats, water was introduced into the oxygen stream (0.7 - 0.9 litres per 1 m^3 of oxygen). The consumption of oxygen during blowing varied from 25 to 35 m^3/min and when using water additions from 27 to 37 m^3/min. Thermal load during the experimental heats was manually controlled on the basis of systematic analyses of the combustion products in vertical flues

Card 1/6

Thermal Performance of an Open Hearth Furnace when Blowing Oxygen or Oxygen Water Mixture into the Bath

and temperatures of the roof (magnesite chromite) and the top of the air regenerators (upper layers - forsterite bricks). In some moments of the heats the thermal load was limited by draught capacity of the furnace. The oxygen supply to flame was cut off during blowing period in order to economise oxygen. The experimental results obtained are shown in Figures 1 - 8. It was found that: 1) Due to an acceleration of decarburisation of metal and an intensification of the evolution of CO from the bath, thermal load during blowing is considerably decreased. Correspondingly the mean thermal load for the whole decarburisation period (from charging of hot iron to the end of blowing) also decreases. 2) When the blowing is started at an optimal moment, the course of heat in the thermo-technological sense substantially differs from the usual one for the open hearth process. Under experimental conditions the mean thermal load during blowing was decreasing to 14 million cal/hr, whereupon

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Thermal Performance of an Open Hearth Furnace when Blowing Oxygen or Oxygen Water Mixture into the Bath

during 30 - 40 minutes it actually amounted to 5 - 6 mil cal/hr and during 15 - 20 minutes of the most violent evolution of CO from the bath, the supply of fuel was completely stopped. 3) The mean thermal load for the whole decarburising period (from charging hot iron to end of blowing) was actually determined by the proportion of the period taken for blowing, the earlier the blowing was started, the lower was the mean thermal load for this period. 4) The absorption of heat by the bath (per unit of time) and the coefficient of the utilisation of the furnace working space increases during blowing. On average during blowing as well as during the decarburisation period the above factors were higher the earlier blowing was started. 5) The period of decarburisation decreases more, the earlier blowing is started, whereupon the rate of decrease of the decarburising period increases faster than the rate of increase of the rate of heat absorption by the bath. Therefore, if blowing was started too early, the metal remains

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insufficiently heated when the blowing is finished and it is necessary to heat it further under inconvenient conditions of decarburised bath. A rational relationship of the duration of the decarburising period and intensity of heating up metal will be obtained only if the blowing is started at an optimal moment, as only then will the maximum thermo-technical effect be obtained. Under experimental conditions, the average specific consumption of conventional fuel for heats in which the blowing was started at the optimum moment decreased to 87 kg/t (with specific consumption of oxygen 37 m^3/t, including 22 m^3/ton added to flame before starting blowing). 6) On the addition of water to the stream of oxygen for the prevention of excessive fuming, the abovementioned relationship remains valid. However, as a proportion of heat is consumed for the evaporation of water and heating up of the steam formed to a